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Organizing for Coalition Warfare

The Role of East European Warsaw Pact Forces in Soviet Military Planning

Michael Sadykiewicz

40 Years 1948-1988

RAND

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PREFACE

This report was prepared as part of a research project on Soviet bloc military affairs under the direction of Dr. A. Ross Johnson. It provides a detailed historical and contemporary analysis of the role of non-Soviet Warsaw Pact (NSWP) military forces in Soviet military planning for warfare in Europe, with emphasis on the intended operational military tasks of East European armies. The study was supported by The RAND Corporation, using its own funds. It draws in part on unpublished research conducted under Project AIR FORCE. Related institutional issues of the Warsaw Pact military command structure in peace and war are examined in a companion RAND Report by the same author, *The Warsaw Pact Command Structure in Peace and War*, R-3558-RC, September 1988. A more general treatment of Soviet military planning for Central European contingencies is contained in the author's RAND Note N-2596-AF, *Soviet-Warsaw Pact Western Theater of Military Operations: Organization and Missions*, August 1987. The Polish internal front is examined in a third publication by the same author, *Wartime Missions of the Polish Internal Front*, N-2401-1-OSD, July 1986. A related RAND Report, *East European Military Reliability: An Emigré-Based Assessment*, R-3480, by Alexander Alexiev and A. Ross Johnson, October 1986, examines the political reliability of East European armies.

The author, Michael Sadykiewicz, served in the Soviet and Polish armed forces for twenty-five years until his dismissal from the Polish Army in 1967. A graduate of the Polish Military Academy, he studied at the Soviet Voroshilov Military Academy and occupied important command and staff positions in the Polish armed forces, where he held the rank of colonel. This study draws on his own military experience and that of other former NSWP officers, as well as on Soviet and East European military literature and Western publications Colonel Sadykiewicz is a Consultant to The RAND Corporation.

SUMMARY

While the Soviet armed forces are justly regarded as the greatest threat to Western Europe, NATO military planners must consider the strength and the role of the armies of the non-Soviet Warsaw Pact (NSWP) nations in any future war. In this study, conclusions regarding the military value, employment, and control of NSWP forces are drawn from the historical record, Soviet doctrine, current published orders of battle, Warsaw Pact military exercises, and the author's experience in the Polish army.

Cont'd Pg 100

VALUE OF THE NSWP FORCES

NSWP soldiers make up more than one-third of all Warsaw Pact troops stationed in Eastern Europe. This fraction overstates somewhat the importance of the NSWP forces, because it does not account for the greater readiness and quality of the Soviet armies. For example, the armaments of the East Europeans are at least a generation behind those of the Soviets, although the Northern Tier armies—those of East Germany, Czechoslovakia, and Poland—are somewhat better armed than the other NSWP forces. When differences in readiness and quality are taken into account, NSWP forces make up 25 percent of all equivalent divisions on the ground, 21 percent of the air forces, and 19 percent of the naval forces in the Warsaw Pact countries.

Even so discounted, the NSWP forces combined are two to five times as strong, depending on what measure is used, as those of all the "minor" NATO allies, i.e., all except the United States, the United Kingdom, and West Germany. Soviet forces outnumber the "major" allies by five to one. Indeed, it is only because of the large NSWP contingent that the Soviets have the potential to mount a successful surprise conventional attack against NATO.

EMPLOYMENT AND CONTROL OF NSWP FORCES

NSWP forces are likely to be employed as much as possible in the first echelon and on the main axes of attack. This is militarily sound, because more of the East Europeans will be closer to the front at the war's outset; it also fulfills the political objectives of minimizing Soviet losses and decreasing the time for East European resistance to develop.

NSWP troops are not likely to be as highly motivated as the Soviets to fight the Americans and West Europeans. To counteract the effects of potential disloyalty, the Soviets may pair NSWP armies only with those NATO adversaries toward whom some basis for animosity exists, e.g., Poles against Germans, not against Americans. They may also enforce greater internal security within the NSWP nations. The Soviets intend to sandwich NSWP forces between Soviet armies to isolate those forces that might be hostile to each other or to the Soviets. Because their lower-quality equipment may slow them down with respect to the Soviets, NSWP armies may be assigned narrower segments of the front. The sandwich plan has its military costs, as it is likely to impede logistics, reinforcement, and interoperability. However, interoperability should still be much better than in NATO, as military ties are much stronger within the Warsaw Pact. Exceptions to the sandwich rule may be made where NSWP units are required to create diversions on the flanks or disruptions in the NATO rear areas, or where NSWP units are especially suitable for fighting in difficult local terrain.

The operational autonomy of the NSWP forces will be limited. Most likely, they will not be organized into autonomous groups larger than armies. The Soviets, of course, will be in charge of the theaters of military operations (northwestern, central, southwestern). They will also probably command all the fronts (the next level down). National fronts would certainly allow better coordination and logistics, but they would also give rise to problems. It would be difficult, for instance, to collect Polish armies from the northern and southern sections of the country to create a single front while the Soviets are driving toward the front lines from east to west. As implied above, national fronts would also make Soviet political control more difficult.

On the other hand, the NSWP forces will not all be broken down to the division level and grafted onto Soviet armies, as has been suggested. NSWP military districts are sized to mobilize as armies (just as those of the Soviets are sized to mobilize as fronts), and East European officers are trained by the Soviets for command at the army level. However, some merging of NSWP divisions into Soviet armies could occur in the event of a short-warning attack, since the requirements of surprise could preclude the assembly of national armies. Indeed, the Soviets may very well prefer a short-warning attack. If war is preceded by a period of tension, doubts among the East European populace could grow, and reserves pouring into the NSWP armies could bring these doubts with them, lowering morale.

NSWP forces will thus be employed under the influence of several key factors:

- The locations of the forces and the axes of most intense conflict.
- Their position at mobilization, if the mobilization period is short.
- The location of "suitable" NATO opponents.
- The nationality of neighboring Warsaw Pact fighting units.

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CONTENTS

FIGURES

TABLES

GLOSSARY

A	Army
AA	Antiaircraft
AB	Airborne
AC	Aircraft
ADE	Armored division equivalent
AFCENT	Allied Forces Central Europe (NATO)
AFNORTH	Allied Forces Northern Europe (NATO)
AFV	Armored fighting vehicle
Amph	Amphibious
APC	Armored personnel carrier
Arty	Artillery
ARV	Armored reconnaissance vehicle
ATGW	Antitank guided weapon
ATK	Antitank
BA	Bulgarian Army
BAOR	British Army of the Rhine
Bde	Brigade
Bn	Battalion
C	Corps
C^3I	Command, control, communication, and intelligence
CDM	Committee of Defense Ministers (WTO)
CENTAG	Central Army Group (NATO)
CFM	Committee of Foreign Ministers (WTO)
C-in-C	Commander-in-Chief
CP	Communist Party
CPSU	Communist Party of the Soviet Union
CWC	Category-weight coefficient
D	Division
Divs	Divisions

DOSAAF	Association for Cooperation with Army, Aviation and Navy (USSR)
ECCM	Electronic counter-countermeasures
ECM	Electronic countermeasures
EE	East European (here, the non-Soviet members of the WTO)
Eng	Engineering (troops)
ETW	European Theater of War
EW	Electronic warfare
GPO	Government Printing Office (U.S.)
GSFG	Group of Soviet Forces in Germany
IAFV	Infantry armored fighting vehicle
IISS	International Institute for Strategic Studies (London)
JAF	Joint Armed Forces (WTO)
JBF	Joint Baltic Fleet (WTO)
JBFC	Joint Baltic Fleet Command (WTO)
JBSF	Joint Black Sea Fleet (WTO)
JBSFC	Joint Black Sea Fleet Command (WTO)
JC	Joint Command (WTO)
JHC	See JC
LOK	Association for Cooperation in the Defense of the Country (Poland)
LRA	Long-range aviation (USSR)
MBT	Main battle tank
MC	Military Council (WTO)
MD	Military District (USSR and EE forces)
MDW	Mass-destruction weapons
MICV	Mechanized infantry combat vehicle
MRD	Motorized rifle division
MRL	Multiple rocket launcher
MVD	Ministry of Internal Affairs (USSR)
NDAC	Nuclear Defense Affairs Committee (NATO)
NKVD	People's Commissariat (Ministry) for Internal Affairs (USSR)
NORTHAG	Northern Army Group (NATO)

NPG	Nuclear Planning Group (NATO)
NS	Navy Staff (WTO)
NSWP	Non-Soviet Warsaw Pact (forces or countries)
OC	Civil Defense (Poland)
OMZ	Oesterrichische Militaerische Zeitschrift
OPK	National Air Defense (Poland)
OTK	Territorial Defense (Poland)
PA	Polish Army
Pact	Warsaw Pact
PCC	Political Consultative Committee (WTO)
POW	Pomeranian Military District (Poland)
PVO	Air defense (USSR)
QCI	Qualitative-coefficient index
RA	Romanian Army
RG	Recoilless gun
RGK	Reserves of the Supreme High Command (USSR)
SA	Surface-to-air (missile)
SC	Supreme Command
SGS	Soviet General Staff
SJAF	Staff of the Joint Armed Forces (WTO)
SMERSH	Soviet military counterintelligence during World War II
SOW	Silesian Military District (Poland)
SP	Self-propelled
TD	Tank (armored) division
TO&E	Table of organization and equipment
TVD	Theater of Military Operations (USSR, WTO)
WEI	Weapon-effectiveness index
WGC	Weapon-generation coefficient
WOP	Border troops (Poland)
WOW	Internal security troops (Poland)
WOW	Warsaw MD (Poland)
WP	Warsaw Pact
WTO	Warsaw Treaty Organization (i.e., Warsaw Pact)
WUV	Weighted unit values

I. INTRODUCTION

In the foreword to a 1982 RAND book, *East European Military Establishments: The Warsaw Pact Northern Tier*,[1] the authors state that their work "is focused not on the size, armaments or operational principles of the armed forces under discussion, but rather on the respective military institutions themselves and their functions—both domestic and within the Soviet military alliance system."

The study presented in this report was undertaken to bridge this gap, that is, to complete the analysis with attention to the strictly military aspects of East European military forces.

The report begins with a brief description of Soviet and Warsaw Pact (WP) military doctrines, then examines the quantitative and qualitative role of the non-Soviet Warsaw Pact (NSWP) forces, their armaments, and the problems of Pact interoperability. Finally, we analyze in detail the wartime operational role of the East European armies, including their echelonment, operational utility and tasks, strategic/operational grouping, and operational autonomy. A comparison of modern Soviet and East European combat capabilities is presented in Appendix B. Comparisons of WP and NATO capabilities are made throughout the report, especially with regard to each side's minor allies.

The Kremlin's current concepts regarding Soviet-controlled East European troops were developed in the 1960s and 1970s and drew on the Soviet World War II experience. This study examines the Soviet use of East European armed forces during World War II as one aid to understanding contemporary Soviet concepts.[2] It does not attempt to provide a detailed historical examination of the evolving role of East European forces in Soviet strategy from 1945 to the 1960s. Analysis of the contemporary role of NSWP forces is focused on the three Northern Tier East European countries, which would play an important role in this crucial strategic area in the event of a major conflict between NATO and the WP.

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[1]A. Ross Johnson, Robert W. Dean, and Alexander Alexiev, *East European Military Establishments: The Warsaw Pact Northern Tier*, New York: Crane, Russak & Company, 1982.

[2]In the final phase of World War II, in 1944–45, there were 1.5 million East European troops under Soviet command. Today, Moscow-controlled East European troops are estimated to be 1.2 million strong.

Like all Western studies of WP military affairs, this study is based on imperfect data. It utilizes published Soviet and East European sources and the author's personal knowledge of WP military affairs through the 1960s to estimate contemporary developments. It does not draw in a major way on earlier Western publications, but is intended as new research which may help confirm or correct earlier analyses. It should be read not as definitive but as interpretive, to be refined and modified as fuller contemporary data become available.

II. SOVIET/WARSAW PACT DOCTRINES AND CONCEPTS

This section sketches overall Soviet military doctrine and concepts that constitute the framework for Soviet military planning related to the NSWP armed forces.

SOVIET MILITARY DOCTRINE

Modern Soviet military doctrine has assumed that a major superpower war under present-day conditions would be a global, multitheater war.[1] This is a relatively new concept. In World War II, the USSR fought on one continent only, and the area over which the Red Army conducted its war operations did not exceed 1 million sq km. The width of the Soviet-German Front was, at most, 2,500 km, and the striking depth of the air forces did not exceed 400 km. But in a present-day world war, with intercontinental ballistic missiles and space weapons, the area of war operations could cover virtually the entire earth.

In contrast to World War II, when operations were conducted in one theater of war at a time (first in Europe, then in August-September 1945, in the Far East), the Soviet strategic leadership could be compelled to conduct operations in several theaters simultaneously.

These global planning assumptions mean that instead of the two-level strategic command system that existed in World War II, i.e., *Stavka* (Stalin's Supreme Headquarters) and fronts, Soviet doctrine for a superpower conflict envisages a three-level command system, i.e., *Stavka*, headquarters of theaters of war, and fronts. Some theaters of war would have a four-level system of strategic command: *Stavka*, headquarters of the theater of war, theater of military operations (TVD),[2] and fronts. This would be similar to the American structure

[1]Soviet authorities now grant the possibility that a conventional conflict could remain limited to a single theater (see Col. Gen. Makhmud Gareev, *Frunze: voennyi teoretik* [*Frunze: Military Theoretician*], Moscow: Voenizdat, 1985, Chap. III). This would be the easier variant of war for the USSR; however, all war plans must be tailored to the most difficult possible variant, a global, multitheater war.

[2]The term *Theaters of Strategic Military Action* is used by some Western experts. See, for example, C. Donnelly, "The Soviet Military Establishment," and P. Petersen, "Soviet Planning for Strategic Operations Against NATO," in *Spotlight on the Soviet Union*, report from a conference at Sundvollen, Norway, April 25–27, 1985, published by the Norwegian Defense College, Oslo, 1986.

in World War II. At that time, the U.S. armed forces had a three-level system, i.e., the President, as the Supreme Commander-in-Chief (with the Joint Chiefs of Staff, equivalent to the *Stavka*), commanders-in-chief of the theaters of war (Generals Eisenhower and MacArthur), and the army groups (equivalent to the Soviet fronts).

We assume that Soviet military doctrine currently anticipates the division of the global theater of war into (1) regional theaters of war, (2) the space theater of war, and (3) the rear (mainland) theater of war (see Fig. 1). Regional theaters are in turn subdivided into (1) oceanic theaters of war (e.g., the Atlantic, Pacific, Arctic, and Indian oceanic theaters of war), and (2) land-naval theaters of war (including the European theater of war (ETW)).

The ETW is divided into three strategic theaters of military operations (*teatry voennykh deistvii*, TVD):

1. Northwestern TVD (or independent front).
2. Western (Central European) TVD.
3. Southwestern TVD.

The ETW, especially in a global, multitheater war, would be commanded by a special Soviet High Command Headquarters, perhaps based on the peacetime Warsaw Pact Joint High Command.[3] The TVD commands, including the Western TVD command, have been established in peacetime in recent years. Wartime fronts would be subordinated to the TVD commands.[4]

The levels and scopes of the military doctrines to which these levels relate are indicated in Fig. 1. Soviet military doctrine stipulates:

> which opponent will have to be fought in a future war; what type of war it will be . . . ; the goals and tasks of a coalition of armed forces in such a war; the requirements in terms of armed forces in order to accomplish the basic tasks and the direction in which such armed forces should be deployed; what preparations for war should be made and the manner in which the war should be conducted.[5]

This applies to the ETW as well.

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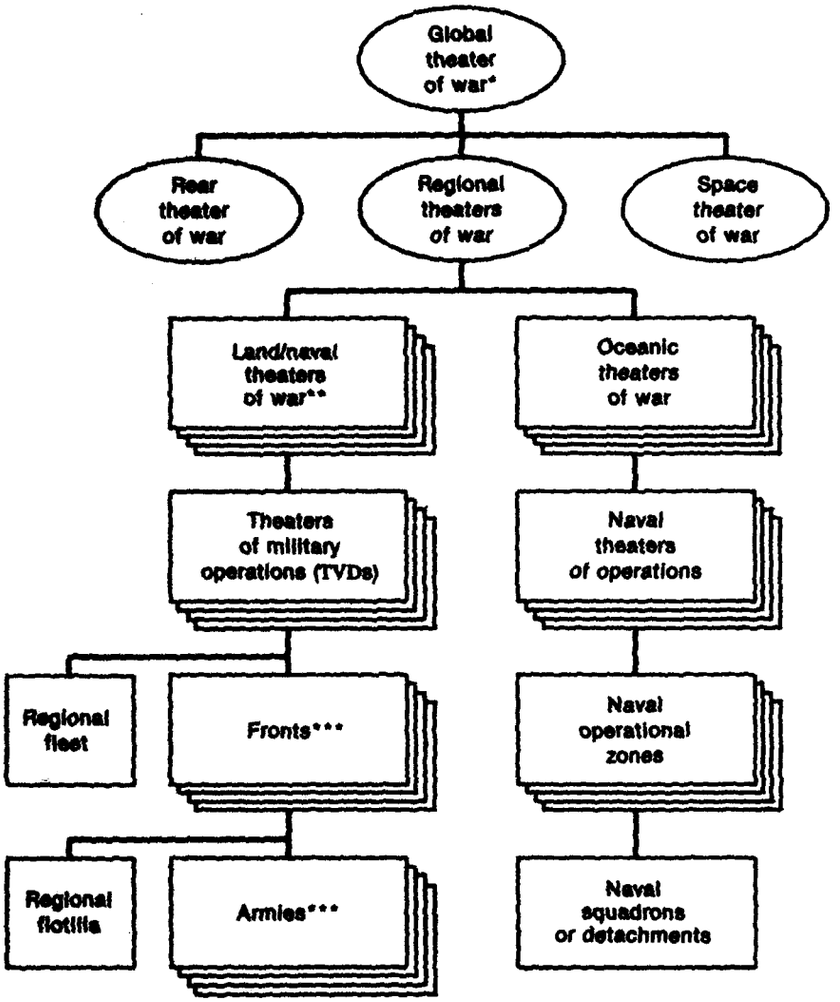
[3]See Michael Sadykiewicz, *The Warsaw Pact Command Structure in Peace and War*, The RAND Corporation, R-3558-RC, July 1988.

[4]See J. C. Hines and P. A. Peterson, "Changing the Soviet System of Control: Focus on Theater Warfare," *International Defense Review*, March 1986; M. Sadykiewicz, *Soviet-Warsaw Pact Western Theater of Military Operations: Organization and Missions*, The RAND Corporation, N-2596-AF, August 1987.

[5]*Sovetskaia Voennaia Entsiklopediia* (*Soviet Military Encyclopedia* in 8 volumes), Vol. 3, Moscow: Voenizdat, 1977, p. 225; A. A. Grechko, *Vooruzhennye sily Sovetskogo Gosudarstva*, 2d ed., Moscow: Voenizdat, 1975, pp. 340–343.



Notes: *Soviet military doctrine
**Warsaw Pact military doctrine
***National military doctrines of East European countries

Fig. 1—The partitioning of the global theater of war: an estimated contemporary Soviet view

WP AND NSWP MILITARY DOCTRINES

Warsaw Pact military doctrine covers only the ETW, including its above-mentioned TVDs, and is a further, detailed development of the portion of Soviet military doctrine that deals with the ETW.[6] The *national military doctrines of the NSWP countries* are obligatory systems of thought in each of these countries regarding the fulfillment of the portion of WP military doctrine that relates to the particular country and its armed forces. These national doctrines differ from Soviet/WP military doctrines in scope and detail only. They stress the importance of geostrategic position; the tasks falling upon the country and its armed forces within the framework of the strategic plans of the WP; war potential (which is the result of military might, political-moral potential, economic potential, and scientific potential); national traditions; and historical experience.[7] As Boleslaw Chocha, the former Chief of the Polish General Staff, stated:[8]

> differences appear mainly in such an area as: peculiarity in some organizational structures of government, military and other bodies, the style of their operations and activities, diversity in the territorial defense system and in civil defense,[9] and in the practice of the mobilization system, etc. For these reasons in spite of the existence of [Warsaw Pact] coalition military doctrine, there still exist also national military doctrines, which, as part of the common directives

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[6]Warsaw Pact military doctrine was for the first time officially announced on May 30, 1987, in connection with a communique from the East Berlin Political Consultative Committee session (*Pravda*, May 30, 1987; see also Army Gen. A. Gribkov's article about this document in *Krasnaia zvezda*, September 25, 1987). However, this document is not "military doctrine" (as defined by the Soviet Military Encyclopedia), but a disarmament proposal. The real scope of WP military doctrine was indicated earlier by a Polish General, J. Kaminski, a former deputy chief of staff of WP forces. Kaminski said this "coalition defense doctrine of the socialist countries" dealt with the following questions: (1) Who, in all probability, will be the enemy? (2) What will be the character of future war? (3) What will be the goals and the tasks of the socialist coalition in that war? (4) How should such a war be prepared for and conducted? (Jozef Kaminski, *Koalicje wojskowe*, Warsaw: MON, 1982, p. 242.)

[7]For discussions of NSWP military doctrines, see Boleslaw Chocha (Lt. Gen., Ret., former Chief of the Polish General Staff), and Col. Prof. Julian Kaczmarek, *Wojna i doktryna wojenna*, Warsaw: MON, 1980; *Leksykon Wojskowy*, Warsaw: MON, 1979; D. Verbitskiy et al. (eds.), *Armii Stran Varshavskogo Dogovora*, Spravochnik, Moscow: Voenizdat, 1985; V. Kulikov, *Kollektivnaia zashchita sotsializma*, Moscow: Voenizdat, 1982; C. Jones, "Soviet Military Doctrine and the Warsaw Pact," in D. Leebaert (ed.), *Soviet Military Thinking*, London: Allen, 1981; Johnson, Dean, and Alexiev, *Military Establishments*; J. Lider, *Military Theory*, London: Gover, 1983; Gen. Jozef Kaminski, "Socjalistyczna doktryna obronna," *Wojskowy Przeglad Historyczny*, No. 1-2, 1980, pp. 31-80.

[8]Chocha and Kaczmarek, *Wojna i doktryna wojenna*, p. 85.

[9]The diversities of the Polish territorial defense system and the civil defense system are analyzed in the author's *Wartime Missions of the Polish Internal Front*, op. cit.

> concerning all the members of the [Warsaw Pact] coalition, include also specific directives for each given country.

The exception is Romanian national military doctrine.[10]

For example, in comparison with the Soviet armed forces, the Polish armed forces have distinct features:

- Polish military districts are army-size commands; Soviet military districts are front-size commands.
- The Commanders-in-Chief of the Polish Navy, Air Force, and Air Defense Force are not deputy defense ministers; those in the USSR are.[11]
- The Polish motor transport service and the armor service are united in one service; in the USSR, they are separate.
- The Polish internal security troops (WOW) are subordinated to the defense ministry; in the USSR, they are subordinated to the internal ministry (*Vnutrennye voiska*).
- The Polish State Defense Committee (*Komitet Obrony Kraju*, KOK) prior to 1984 was subordinated to the Council of Ministers; in the USSR, since 1964 at least, such a body has been above the Council of Ministers.[12]

The primary reason for these differences is the principle that the lower the command level, the greater the tendency to concentrate functions in one person. For example, in the Soviet armed forces, there are two separate sections in the divisional-level headquarters: a personnel section and a replacement section. On the regimental level, the fourth assistant of the chief of staff deals with these matters. The Polish armed forces is numerically one-tenth the size of the Soviet.

The second reason for the differences among military doctrines is that, for example, in Poland in wartime, the territory of Poland would be much more in danger of direct attack by enemy troops (such as airborne and amphibious assault troops) than would the territory of the USSR. It is necessary, even in peacetime, to concentrate all the forces of the "internal front" in the hands of the Polish Defense Ministry, while the equivalent Soviet forces are divided among the Defense Ministry, the KGB, and the Ministry of the Interior.

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[10]The (very different) contents and essence of this doctrine are analyzed in A. Ross Johnson, et al., *East European Military Establishments*, App. E.

[11]However, the commander of the East German Air Force, which is much smaller than the Polish, is a deputy defense minister, perhaps because he is simultaneously the commander of the East German Air Defense Force.

[12]The first point is made on the basis of personal experience. The remaining points are documented frequently in *Krasnaia zvezda* and *Zolnierz Wolnosci*.

All the various kinds of Polish troops, without exception, also exist in the USSR and in all other East European countries. Their peacetime and wartime tasks are identical. Therefore, the differences are in their subordination system and their relative importance within the national defense system.

East European national military doctrines also incorporate distinctive tactical and staff elements. For example, General Florian Siwicki, now the Polish Defense Minister, noted:

> Over the course of many years' work, we have defined doctrinal theories which are concordant with our needs and form an integral part of the general coalition defense doctrine of the socialist states. We have devised an efficiently operating, complex system for achieving full combat readiness of the armed forces, which has been tested time and again during countless exercises.
>
> We also have outstanding achievements which we demonstrate during Warsaw Pact exercises. Our solutions for assault crossing of wide stretches of water, crossing canals with built-up banks, conveying tanks across the bottom at various times of the year, etc., have been favorably acknowledged. We have devised and introduced into the forces the method of parallel or almost parallel decision-making in several links in the command chain in order to speed up the process of decision-making and thereby leave as much time as possible for those whose task it is to execute the decisions. The system of information flow used by our staff in the command system and the functional, technical facilities at command stations in the field have also met with approval.[13]

Such claimed achievements are tactical/technical and staff improvements, which in no way deviate from general WP doctrine and have no influence on the most important elements of this doctrine. They merely reconfirm the inequality of the WP partners.

SOVIET MILITARY CONCEPTS

As background to examining the role of the East European armed forces in Soviet military planning, it is necessary to review several Soviet military concepts.

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[13]Gen. Florian Siwicki, "Kształtowanie się i rozwój Ludowego Wojska Polskiego . . .," *Wojskowy Przegląd Historyczny*, No. 4, 1973, cited in *Mała Kronika Ludowego Wojska Polskiego 1943–1973*, Warsaw: MON, 1975, p. 125. See Appendix A for a recent Polish statement of national military doctrine which stresses WP coalition aspects.

Military/Geographic Areas

The Soviet classification system of military/geographic areas is shown in Table 1. This Soviet approach assures that:

1. In the event of a war in Europe, all the key headquarters will be exclusively in the hands of the Soviet Strategic High Command.
2. Military/strategic war planning is the exclusive task of Soviet high commands in peacetime; in wartime, these commands will conduct hostilities on all strategic levels and also on most of the operational levels.
3. Assuming that in wartime there will be a four-level division of strategic/operational commands (*Stavka*, ETW or TVD, front headquarters, army headquarters) in the ETW, the NSWP commands will have charge of a small part of the lowest levels in this hierarchy, the armies, and perhaps fronts.[14]
4. The NSWP commands of operational level (army and front) will clearly have a *secondary* role in WP strategic planning and in the conduct of a war in Europe. Moreover, Soviets may command all fronts (as discussed in Section VII).

Strategic Echelons

The Soviet and WP armed forces in the ETW are divided into the first strategic echelon, the second strategic echelon, and the deep strategic reserves (the reserves are made up of only Soviet forces).[15]

Western military experts hold differing views as to which NSWP forces belong to any given strategic echelon. This is particularly true of the Polish armed forces. According to the Soviet definition of the first and second strategic echelons, "In the course of deployment of the armed forces, the First Strategic Echelon usually consists of large strategic and operational units of all kinds of armed services destined to take part in initial operations. The Second Strategic Echelon includes large strategic and operational units deployed [activated] in the rear."[16]

It is clear from this definition that in peacetime the Polish armed forces are in the second, not the first, strategic echelon. Only in wartime, or in the final stages before the outbreak of war, when Polish forces are deployed on East German territory, would they be in the

[14]Theoretically, only Polish and possibly Czechoslovak and Bulgarian fronts could be established, as discussed below.

[15]See Sadykiewicz, *Western TVD*.

[16]*Soviet Military Encyclopedia*, Vol. 7, 1979, p. 554.

Table 1

THE CLASSIFICATION OF GEOGRAPHIC/STRATEGIC AREAS: A CONTEMPORARY SOVIET VIEW

Area/Direction (Theater of War[a])	Subordination (TVDs)	Composition (Hqs of TVDs)	Past and Present Examples (European Theater of War)
Theater of military operations (TVD)[b] (naval theater of operations)	Strategic directions (naval operational zones)	Fronts (sometimes only one front) and the regional fleet or flotilla(s)	Northwestern TVD, Western TVD, Southwestern TVD
Strategic direction[c] (naval operational zone)	Operational directions	One front or one to two field armies and the regional flotilla (in maritime areas)	Warsaw-Berlin strategic direction (in the last stage of WWII, belonged to the 1st Belorussian Front, under Marshal Zhukov)
Operational direction	—	One field army (or an independent army corps) and naval detachment or squadron (in maritime areas)	Dresden operational direction (in the last stage of WWII, belonged to the Polish 2nd Army, under Gen. Swierczewski)

SOURCES: *SME*, Vol. 6, p. 64; Vol. 7, p. 535; Vol. 8, pp. 8–9; S. Ivanov, N. Shekhovtsov, *Opyt raboty glavnykh komandovanii na teatrakh voennykh deistvii*, VIS, 1981, No. 9; A. Bashenov, *Tendentsii razvitiia organizatsionnoi struktury organov upravlenia frontov i armii*, VIS, 1981, No. 3; V. Sokolovskii, *Voennaia strategiia*, 2nd Ed., M. 1963, pp. 454-474; V. Kulikov, *Strategicheskoe rukovodstvo Vooruzhennymi Silami*, VIS 1975, No.5; K. Sobczak et al. (eds), *Encyklopedia II wojny swiatowcj*, MON, Warsaw, 1975, pp. 39-41, 62-68.

[a]Can be under the direct control of *Stavka* as was the European Theater of War in World War II, or controlled via an intermediate strategic-level command, such as the Soviet Far Eastern Command under Vasilevskii in 1945.

[b]Can be controlled by one of the following methods directly by *Stavka* or by the theater of war command.

[c]In World War II, some separate strategic directions did exist in July-August 1941 (under Marshals Voroshilov, Timoshenko, and Budennyi), but in the modern Soviet sense, these were in fact TVDs.

first strategic echelon. The same applies to the Romanian armed forces, which are in the second echelon in peacetime, and the Czechoslovak armed forces that are deployed in Slovakia. All other NSWP armed forces are strictly in the first echelon.

Prewar Readiness Potential

According to Soviet military doctrine, prewar readiness potential (which includes, among other things, the strength and deployment of forces; command, control, communications, and intelligence (C^3I) capability; infrastructure; and rear-service readiness) is one of the key factors that should predetermine the start, the progress, and, finally, the outcome of a war in a given theater.[17] Thus, all NSWP forces deployed in the first strategic echelon, as well as the Romanian and the Polish armed forces (which have a high level of prewar readiness potential), are important components of the prewar readiness potential of the Soviet bloc armed forces in Europe.

One of the most important indicators of prewar readiness potential is the ratio of Category 1 and 2 divisions, which require relatively small mobilization efforts, to Category 3 divisions, which have only about 30 percent wartime strength and must be substantially reinforced by mobilization before the outbreak of war. This ratio for the East European and Soviet divisions in the first and second strategic echelons on East European territory is shown in Table 2; it is 100 percent for Soviet forces, but less than that for all NSWP forces except those of East Germany.

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[17]"Combat readiness is the crowning achievement of the troops' combat mastery in peacetime and the key to victory in war." (*Voyennyi vestnik*, No. 7, 1986, p. 7.)

Table 2

COMBAT READINESS OF SOVIET AND NSWP FORCES IN EASTERN EUROPE

Forces	Number of Divisions				Percent of Divisions, Categories 1 and 2
	Total	Category 1	Category 2	Category 3	
Soviet forces in Eastern Europe	30	30	—	—	100
East Germany	6	6	—	—	100
Poland	15[a]	10	2	3	80
Czechoslovakia	10	6	2	2	70
Bulgaria	10[b]	6	1	3	70
Romania	11[b]	2	4	5	54
Hungary	6	1	2	3	50
Total	88	61	11	16	82

SOURCES: For Soviet, East German, Polish, and Czechoslovak divisions, John M. Collins, *U.S./Soviet Military Balance: Statistical Trends, 1970-1981* (as of January 1, 1983), Congressional Research Service, The Library of Congress, Washington, D.C., 1983, pp. 114-115; for Romanian forces, International Institute for Strategic Studies (IISS), *The Military Balance, 1985-1986*, London, p. 35; for Bulgaria and Hungary, IISS, *The Military Balance, 1985-1986*, augmented by the author's own estimates.

[a]According to the Polish military press, the 7th Amphibious Assault Division and the 6th Airborne Division were in 1987 restructured into brigades. It may be assumed, however, that in wartime these units will return to divisional status. In the present study, this restructuring was not taken into account.

[b]Equivalent divisions, counting also tank brigades and mountain brigades.

III. QUANTITATIVE AND QUALITATIVE ROLES OF NSWP FORCES

HISTORICAL EXPERIENCE IN WORLD WAR II

The sizes of the East European forces in the final stages of World War II are shown in Table 3. Not all the troops and formations identified in Table 3 participated in the hostilities, however, primarily because of lack of armaments and lack of time to attain combat readiness within the newly established formations. This was particularly the case with the Hungarian and Romanian forces.

The East European troops were kept in the rear also because, being pro-Soviet, they were assigned to enforce the political reorganization of territories along Soviet lines and, in cooperation with the NKVD (the People's Commissariat for Internal Affairs), to safeguard the rear of the advancing front. This was especially true of the Polish forces, and generally true of the Czechoslovak and Bulgarian forces.

Table 4 shows the mobilization efforts of the Polish and Bulgarian armed forces, under Soviet command, and their contributions to the hostilities on the Soviet/German front.

In the fall of 1944, the Soviet High Command anticipated that the war would last until the end of 1945. Provisions were thus made for considerable expansion of allied East European armies. A Soviet General Staff directive stated that the Polish Army should increase to 566,000 troops, which meant calling up an additional 181,000 men. The population of the Polish territory freed from German occupation at the time was only 5.5 million, so the mobilization rate was 10.3 percent, far higher than the Polish prewar mobilization rate of 4 percent.

The *Stavka's* prognosis for the duration of the war in Europe changed at the end of 1944, and a decision was made to stop the buildup of East European forces and to use all those available, whether combat ready or not, to reinforce the army in the field, especially the Northern Tier. The result was tragic: The rapidly created 2nd Polish Army, under General Karol Swierczewski, was sent into battle with 50 percent of its men only "half-ready" and not properly trained for combat. More than 20,000 officers and men and most of the Army's heavy weapons were lost in the first 14 days of fighting (April 14 to April 30, 1945).[1]

[1]See J. Malczewski, "O stratach LWP w latach 1943–1945," *Wojskowy Przeglad Historyczny*, February 1972, pp. 213–225.

Table 3

EAST EUROPEAN FORCES UNDER SOVIET COMMAND in 1944–1945[a]

Forces	All-Arms Armies	Independent Corps[b]	Divisions[c]	Manpower	Percentage of Non-Soviet Forces
Polish	3	1	25	385,000	27
Czechoslovakian	1[d]	1	(e)	60,000	4
Romanian	2	3	17	500,000	35
Bulgarian	3	—	20	446,000	31
Hungarian	—	—	4[d]	46,000	3
Total	9	5	66	1,437,000	100

SOURCES: A. V. Antosyak et al. (eds.), *Zarozhdenie narodnykh armii stran uchastnits Varshavskogo Dogovora, 1941-1949*, Izdatielstvo, Nauka, Moscow, 1975; *Encyklopedia II Wojny Swiatowej*, MON, Warsaw, 1975; D. V. Diev, *Rumynskaia Narodnaia Armia*, Voenizdat, Moscow, 1966; T. Rawski et al., *Wojna wyzwolencza narodu polskiego w latach 1939-1945. Wezlowe problemy*, Wydawnictwo MON, Warsaw, 1963; L. Svoboda, *Ot Buzuluka do Pragi*, Voenizdat, Moscow, 1969.

[a]Including the highest figures reached in that time.
[b]Including the Polish 1st Tank Corps and the 1st Czechoslovak Corps.
[c]Infantry, cavalry, artillery, antiaircraft (AA) artillery, and mountain.
[d]Not operational until the end of the war.
[e]The corps consisted of 5 brigades.

Table 4

THE FRONT/REAR DISTRIBUTION OF POLISH AND BULGARIAN FORCES UNDER SOVIET COMMAND, WINTER-SPRING 1945

Force	Total	Field Army		Rear	
		Number	Percent	Number	Percent
Polish armed forces					
Troops	385,000	185,000	48	200,000	52
Divisions					
Infantry	14	10	71	4	29
Cavalry	1	1	100	—	—
Tank[a]	2	2	100	—	—
Artillery[b]	4	3	75	1	25
Aviation	4	4	100	—	—
Bulgarian armed forces					
Troops[c]	446,000	287,000	64	159,000	36
Divisions					
Infantry	16	9	56	7	44
Cavalry	2[d]	2	100	—	—
Tank (brigade)	1	1	100	—	—
Aviation	1	1	100	—	—

SOURCES: Same as Table 3.

[a]One tank corps and one separate tank brigade.
[b]Field and AA artillery.
[c]In October 1944.
[d]Brigades.

The 42 East European ground force divisions constituted only 8 percent of the total USSR/East European strength. The East European air force and navy contributions were smaller still (see Table 5). However, the ratio of Soviet to East European divisions shown in Table 5 does not reflect the true proportional contributions of the two sides. East European divisions were, on average, approximately two and one-half times larger than Soviet divisions in terms of manpower,[2] so the East European contribution was about 20 percent. In other words, during the final stages of World War II, every fifth soldier fighting on

Table 5

CONTRIBUTION OF SOVIET AND EAST EUROPEAN FORCES TO THE ANTI-NAZI OVERALL MILITARY BALANCE, WINTER 1945

Forces	Soviet	East European	Percentage of East European Forces in Total
Ground forces[a]			
Divisions and equivalents[b]	506	42	8[c]
Air forces			
Combat aircraft[d]	4,100	832	2
Navies			
Major and minor warships	300[e]	Few[f]	< 1

SOURCES: D. F. Ustinov, Marshal of the Soviet Union, Chairman of the Main Editorial Commission, *Istoria Vtoroi Mirovoi Voiny 1939-1945*, 12 vols., Moscow, 1979, Vol. 10, pp. 37-38; also writings mentioned in Table 3.

[a]Only forces actively engaged in the hostilities, excluding forces of strategic reserves and in the rear.

[b]Infantry, cavalry, mountain, and tank divisions, as well as mechanized and tank corps.

[c]East European forces constitute 20 percent when adjusted to reflect the real manpower figures in these divisions.

[d]On active combat duty.

[e]Only Baltic and Northern Soviet Fleets.

[f]Small Romanian and Bulgarian Danube river units.

[2]Soviet infantry divisions at that time averaged 3,000 to 3,500 men, while the East European infantry divisions averaged 8,000 to 9,000 men. See the report of Marshal Rokossovskii to the Soviet General Staff on February 15, 1945, about the manpower of his Second Belorussian Front: 26 divisions with an average of 3,000 men, and 8 divisions with an average of 4,000 men (*VIZh*, March 1985, p. 77). These figures were typical of most Soviet infantry divisions. The tables of organization and equipment (TO&E) for infantry divisions were identical or very similar for Soviet and East European divisions, showing approximately 11,000 men for each; but this size was never reached by Soviet divisions.

the German Eastern Front, not counting the 800,000-strong Yugoslav army,[3] was non-Soviet, especially in first-line fighting formations.

THE PRESENT SITUATION

Today, more than 40 years after the end of World War II, the WP justifies the deployment of Soviet forces in four East European countries. Soviet divisions are stationed in the very heart of Europe, more than 2,000 km west of Moscow and less than 200 km from the European Atlantic coast. This fact alone suggests the great strategic importance of the East European countries for the USSR.

These countries are also militarily important. The Polish army is presently the third largest army in Europe, after the Soviet and West German armies. If we consider only the actual number of East European and Soviet ground divisions in the ETW, without considering their respective qualitative strengths, we obtain the figures shown in Table 6. According to these calculations, the East European forces contribute:

- 45 percent of the divisions in the first strategic echelon.
- 36 percent of the divisions in the second strategic echelon.
- 37 percent of the divisions in the overall theater forces.

If we also consider the possibility of deploying the Polish army and the Czechoslovak divisions in Slovakia from the second to the first strategic echelon, which would be easy because of proximity, the total proportion of East European divisions in this decisive echelon reaches 57 percent. The real combat capabilities of the East European forces are therefore of great interest. However, it is very difficult to assess those capabilities.

The German General Staff had similar problems when it tried to evaluate the combat worth of its allied Romanian, Italian, and Hungarian divisions during World War II. Ultimately, it settled for the generalized assumption that each of those divisions was, on average, worth half a German division.[4] It was much easier to compare forces at that time than it is today, if only because the variety of equipment and arms was approximately 70 percent smaller than that in a contemporary infantry or armored division in Europe.

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[3]As of March 1, 1945.

[4]See Heinz Magenheimer, "Methoden und Grenzen eines militaerischen Kraftvergleichs," *Osterreichische Militaerische Zeitchrift*, No. 2, 1984, p. 126.

Table 6

CONTRIBUTION OF SOVIET AND EAST EUROPEAN DIVISIONS IN THE WARSAW PACT EUROPEAN THEATER OF WAR

Forces	1st Strategic Echelon	2nd Strategic Echelon	Strategic Reserves	Total
Overall theater, including Soviet-Turkish border				
Soviet divisions[a]	45[b]	65[c]	27[d]	137
East European divisions[a]	30[e]	27[f]	—	57
Subtotal	75	92	27	184
Europe only[g]				
Soviet divisions[a]	33	46	14	98
East European divisions	30	27	—	57
Subtotal	66	73	14	155

NOTE: Figures taken from *The Military Balance 1987–1988*. The Unified Army Corps in the Belorussian Military District shown in *The Military Balance* was not counted because of a lack of details.

[a]Active tank, motorized rifle, airborne, and amphibious assault divisions.

[b]Includes 19 divisions in the German Democratic Republic (GDR), 5 in Czechoslovakia, 4 in Hungary, and 5 airborne divisions deployed in the Western Military Districts (these divisions are available to take part in the first operations, so they are an integral part of the First Strategic Echelon) as well as 12 divisions in the Trans-Caucasian Military District.

[c]Includes 2 divisions in Poland, 63 divisions in the Western Military Districts.

[d]Includes Moscow, North-Caucasus, Volga, and Ural Military Districts.

[e]Includes 6 GDR divisions, 8 Czechoslovakian divisions, 10 Bulgarian (8 motor-rifle divisions plus 5 tank brigades and 1 mountain brigade as equivalent of two divisions), and 6 Hungarian divisions.

[f]Includes 15 Polish divisions, 10 Romanian, and 2 Czechoslovakian divisions, deployed in Slovakia.

[g]Not including Soviet divisions in the Trans-Caucasus and North Caucasus Military Districts.

This study attempts to establish the real combat potential value of the basic mass of East European forces, i.e., the motorized rifle divisions (MRDs) and tank divisions (TDs), in comparison with their Soviet counterparts. To obtain a full picture of the relative contributions of East European and Soviet divisions, it is necessary to consider both a readiness-degree index and a qualitative-coefficient index.

The *readiness-degree index* (Table 7) indicates the peacetime manning levels of the WP ground divisions in relation to their wartime

Table 7

PEACETIME MANNING, AS A PERCENTAGE OF WARTIME MANNING

Divisions	Soviet	East European
Category 1[a]	75 to 100	Up to 75
Category 2	50 to 75	Up to 50
Category 3	Less than 50	Little more than cadres

[a]In fact, in both the USSR and the East European armies these divisions are designated, respectively, Category A, B, and C, but we use the conventional Western classification, Category 1, 2, and 3.

TO&E; all these divisions are complete with equipment, but the equipment of those in Category 3 is obsolescent.[5]

The *qualitative-coefficient index* (see Table 10 below) is the ratio of qualitative strength of the Soviet to East European divisions at the present time, where "qualitative strength" means the overall quality of combat and support equipment, training level, C^3I capabilities, and the combat and logistic support capabilities of units of the divisional slice (i.e., units on the army and front level). We used the armored division equivalent (ADE) method described in detail in App. B to derive the actual relationship between the qualitative combat potential of the Soviet and East European divisions of the Northern Tier. The figures shown in Table 8 indicate that the wartime total strength of the three Northern Tier NSWP country divisions is equivalent to 25 Category 1 Soviet tank divisions, nine of which are deployed in East Germany in peacetime (see Table 9). This contribution is probably larger than that of NATO nations of approximately the same size.

Assuming a coefficient of 1.0 for the strongest divisions in the WP—the Soviet Category 1 divisions—the remaining divisions have the estimated coefficients shown in Table 10. Using the coefficients, we can reconstruct the real contribution of Soviet and East European divisions to the overall strength of such forces in the WP balance. The results are shown in Table 11. The share of participation of Soviet and East European divisions also applies to the whole of their divisional slice, the size of which is proportional to the number of active divisions. The figures in Table 11 also apply to all the ground forces of these countries.

[5]IISS, *The Military Balance, 1982-1983*, pp. 11, 20; IISS, *The Military Balance, 1983-1984*, p. 19.

Table 8

COMPARISON OF QUALITATIVE COMBAT POTENTIAL OF SOVIET AND EAST EUROPEAN MANEUVER DIVISIONS
(Estimated)

Comparison of Group of Soviet Forces in Germany (GSFG) divisions with Northern Tier East European divisions	
Soviet armored division, Category 1	1.00
Soviet MRD, Category 1	0.92
East European armored division, Category 1	0.70
East European armored division, Category 2	0.52
East European MRD, Category 1	0.62
East European MRD, Category 2	0.49
East European MRD, Category 3	0.38
East European reserve division	0.30[a]
Comparison of East European Northern Tier armored division, Category 1, with all other East European Northern Tier divisions	
East European armored division, Category 1	1.00
East European armored division, Category 2	0.74[b]
East European MRD, Category 1	0.88
East European MRD, Category 2	0.71
East European MRD, Category 3	0.54
East European reserve division	0.42[c]

SOURCE: See Table B-18 in Appendix B.

[a]Or 0.40 for the GDR reserve divisions; this is described later.

[b]In East European forces there are probably no armored divisions of Category 3 except in Czechoslovakia.

[c]Or 0.56, for the GDR reserve divisions.

Table 9

WARTIME COMBAT POTENTIAL OF NORTHERN TIER NSWP DIVISIONS COMPARED WITH ADE COEFFICIENT FOR A SOVIET TANK DIVISION, CATEGORY 1, IN GSFG

GDR	
2 armored divisions, Category 1	× 0.70 = 1.40
4 motorized-rifle divisions, Category 1	× 0.62 = 2.48
4 reserve divisions	× 0.40 = 1.60
Total	4.88
Czechoslovakia	
1 armored division, Category 1	× 0.70 = 0.70
2 armored divisions, Category 2	× 0.52 = 1.02
2 armored divisions, Category 3	× 0.45 = 0.90
5 motorized-rifle divisions, Category 1	× 0.62 = 3.10
5 reserve divisions	× 0.30 = 1.50
Total	7.22
Poland	
5 armored divisions, Category 1	× 0.70 = 3.50
3 motorized-rifle divisions, Category 1	× 0.62 = 1.86
4 motorized-rifle divisions, Category 2	× 0.49 = 1.96
3 motorized-rifle divisions, Category 3	× 0.38 = 1.14
10 reserve divisions	× 0.30 = 3.00
Total	11.46

SOURCE: For number of divisions according to their category, see Table 2.

Table 10

ESTIMATED QUALITATIVE COEFFICIENT OF WP DIVISIONS
(Number of divisions in parentheses)

Divisions	Coefficient
Soviet divisions, Category 1	1.0
Soviet divisions, Category 2	0.9
Soviet divisions, Category 3	0.7
East German divisions (all are Category 1) (6)	0.9
Polish divisions, Category 1 (10)	0.8
Polish divisions, Category 2 (2)	0.7
Polish divisions, Category 3 (3)	0.5
Czechoslovakian divisions, Category 1 (6)	0.85
Czechoslovakian divisions, Category 2 (2)	0.7
Czechoslovakian divisions, Category 3 (2)	0.5
Bulgarian divisions, Category 1 (6)	0.6
Bulgarian divisions, Category 2 (1)	0.5
Bulgarian divisions, Category 3 (3)	0.4
Hungarian divisions, Category 1 (1)	0.65
Hungarian divisions, Category 2 (2)	0.5
Hungarian divisions, Category 3 (3)	0.4
Romanian divisions, Category 1 (2.3)	0.5
Romanian divisions, Category 2 (5)	0.4
Romanian divisions, Category 3 (4)	0.3

NOTE: The qualitative-coefficient index is extracted from Table 8 and adjusted for national differences.

Table 11

FULL-STRENGTH DIVISION EQUIVALENTS IN SOVIET AND EAST EUROPEAN WARSAW PACT FORCES

Country	Number	Percent within WP[a]
USSR	107.0	75
Poland	10.9	8
Czechoslovakia	7.5	5
Bulgaria	5.3	4
East Germany	5.3	4
Romania	4.1	3
Hungary	2.9	2
Total	143.0	100

[a]Percentages do not total to 100 due to rounding.

To calculate the respective participation of Soviet and East European forces in the WP air force and navy, we must again refer to the quality-coefficient index. Applying coefficients given in Table 12 to the number of aircraft and warships—the most measurable components of these armed services—we obtain the overall balance shown in Table 13.

Figure 2 graphically presents the data of Tables 11 and 13. The East European forces are shown to contribute 25 percent of the ground forces, 28 percent of the air forces, and 30 percent of the naval forces in the WP balance.

As an analogy, let us assume that NATO is divided into "major" and "minor" allies—the major allies being those forces deployed in continental Europe by the United States, Great Britain, and West Germany, and all the other allies being minor (the French and Spanish forces are not taken into consideration). The military strength of the minor allies of both alliances is compared in Fig. 3.

Although the East European forces represent about 25 percent of the overall strength of the WP, they are fully equivalent to all 12 "minor" NATO allies. Moreover, in the strategically decisive Northern Tier,

Table 12

ESTIMATED QUALITATIVE-COEFFICIENT INDEX FOR SOVIET AND EAST EUROPEAN WARSAW PACT AIR FORCES AND NAVIES

Country	Air Forces	Navies
USSR	1.0	1.0
Poland	0.7	0.7
Czechoslovakia	0.8	—
East Germany	0.8	0.7
Hungary	0.7	—
Bulgaria	0.6	0.6
Romania	0.5	0.5

SOURCE: Author's judgment based on degree of modernization of weapons and other combat equipment, extracted from IISS, *The Military Balance, 1987-1988*, London, 1987.

Table 13

CONTRIBUTIONS OF SOVIET AND EAST EUROPEAN AIRCRAFT AND WARSHIPS TO OVERALL WP BALANCE

	Aircraft[a]				Warships[b]			
Country	Number[c]	Qualitative Coefficient Index, QCI	Number, Adjusted by QCI	Percent of Total WP Aircraft	Number[c]	Qualitative Coefficient Index, QCI	Number, Adjusted by QCI	Percent of Total WP Warships
USSR	6,533[d]	1.0	6,533	79	891[e]	1.0	891	74
Poland	695	0.7	487	6	157	0.7	110	10
Czechoslovakia	505	0.8	404	5	—	—	—	—
East Germany	400	0.8	320	4	120	0.7	84	7
Bulgaria	305	0.6	183	2	83	0.6	50	4
Hungary	190	0.7	133	2	—	—	—	—
Romania	368	0.5	184	2	121	0.5	61	5
Total	8,996	—	8,244	100	1,373	—	1,196	100

[a]Includes also armed helicopters; does not include Navy aviation.
[b]Includes submarines, major and minor warships, and sea-landing craft.
[c]Data from IISS, *The Military Balance 1986-1987.*
[d]Taking 65 percent of the total strength of the long-range aviation, air defense aviation, and air force (frontal aviation), including armed helicopters.
[e]Includes only the Baltic, Black Sea, and Northern Fleets.

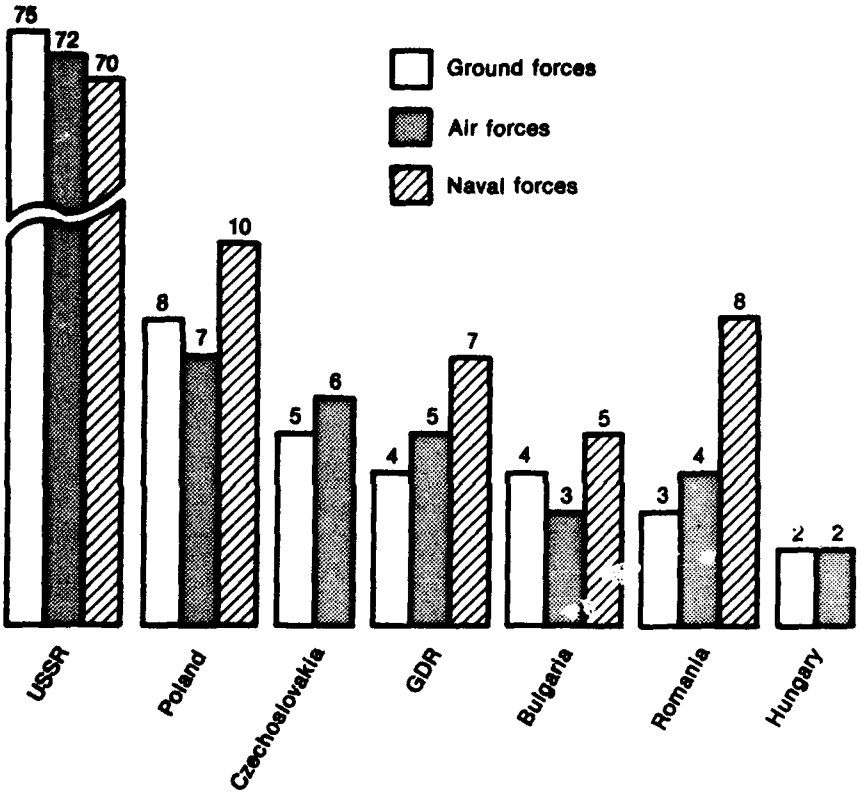
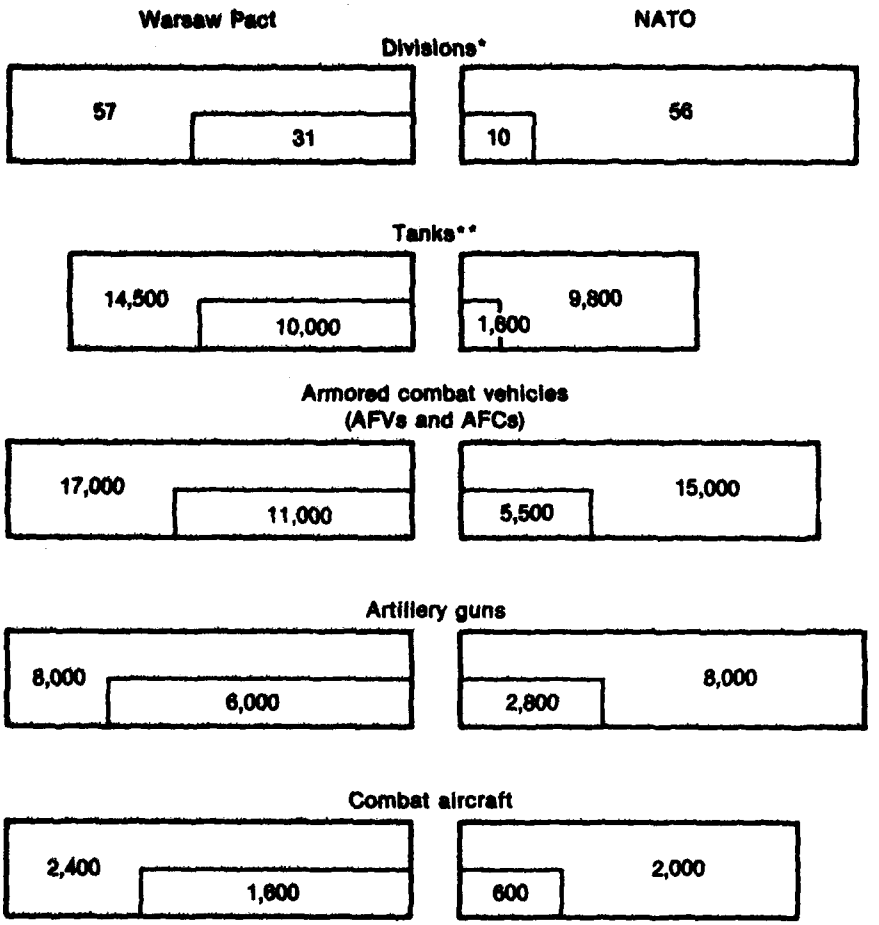


Fig. 2—Soviet-East European participation in the overall Warsaw Pact military balance (percentages, not counting the qualitative-coefficient index)



* Independent brigades aggregated on the basis of three brigades to one division

** Main battle tanks

NOTE: WP East European Northern Tier consists of the GDR, Czechoslovakia, and Poland; on the NATO side, counting only the forces of Norway, Denmark, Belgium, Luxembourg, the Netherlands and Canadian forces stationed in Germany.

SOURCE: Compiled from IISS, *The Military Balance, 1984-85; 85-86; 86-87.* All figures rounded

Fig. 3—Strength of Warsaw Pact and NATO minor allies (Northern Tier shown in smaller boxes)

the three minor WP allies have the following advantage over the six minor NATO allies in the main means of ground-air warfare:

Military Strength	Minor Allies, WP/NATO Ratio
Divisions	4.4 : 1
Tanks	5.3 : 1
Armored personnel carriers (APCs) and armored fighting vehicles (AFVs)	2.3 : 1
Artillery guns	2.1 : 1
Aircraft	2.5 : 1

The East European forces play a very important role in WP strategy, precisely because they "neutralize" the military forces of all 12 "minor" NATO allies, even including the forces of the 1st French Army in Germany. This would suggest that more than 100 Soviet divisions[6] could be deployed against 20 U.S., British, and German divisions,[7] giving the Soviets an overwhelming 5-to-1 advantage.[8]

THE WESTERN TVD AND THE STRATEGIC VALUE OF NSWP FORCES

The East European contribution to the Western TVD is shown in Table 14 and Fig. 4. Since World War II, East European participation in the strategically decisive Central Front has grown as follows:

- Ground forces: from 20 percent to 25 percent.[9]
- Aircraft: from 1.7 percent to 28 percent.
- Naval warships: from less than 1 percent to 30 percent.

These are very significant increases. In the decisive Western TVD, every fourth ground forces division, every third to fourth aircraft, and every third warship is non-Soviet.

Of course, in the event of war, after partial or general mobilization, the Western TVD figures would greatly increase. Analyses of the mobilization possibilities of the East European forces are beyond the scope of the present study, but they are significantly greater than

[6]Including 30 in Eastern Europe and 70 in the Soviet Western and Southwestern military districts.

[7]Counting 12 German divisions, 4 divisions of the British Army of the Rhine, and 4 divisions of the 7th U.S. Army.

[8]This does not mean that the Soviet divisions will be committed exclusively against the NATO major allies, and the East European divisions against the minor ones. This abstract example merely emphasizes the specific weight of NSWP forces.

[9]Based on quantitative ground force division equivalents.

Table 14

QUANTITATIVE CONTRIBUTION OF EAST EUROPEAN FORCES TO THE OVERALL PEACETIME MILITARY BALANCE OF THE WESTERN TVD

Forces	Number	Percentage within the Western TVD
Front-level headquarters[a]	2	20
Tank armies[a]	3	21
All-arms armies[a]	4	33
Total, tank and all-arms armies[a]	7	26
Air armies[a]	3	33
Tank divisions	12	24
Motorized-rifle divisions	17	35
Total, tank and motorized-rifle divisions	29	32
Airborne divisions[b]	1.5	33
Amphibious divisions[c]	1	66
Artillery divisions[d]	3	30
Troops	612,000	28
Tanks	10,200	35
Armored personnel cars	11,950	37
Guns, 100-mm and above	6,800	29
Aircraft[e]	1,510	43
Warships	277	50

SOURCES: Department of Defense, *Soviet Military Power 1988*, GPO, Washington, D.C., 1988; IISS, *The Military Balance, 1987-1988*, London, 1987; Collins, *U.S./Soviet Military Balance*, updated August 1, 1983; David G. Isby, "Weapons and Tactics of the Soviet Army," *Jane's Defence Weekly*, London, 1981; John Hemsley, "Soviet Troop Control," *Brassey's*, Oxford, 1982; NATO Information Service, "NATO and the Warsaw Pact Force Comparison," Brussels, 1984.

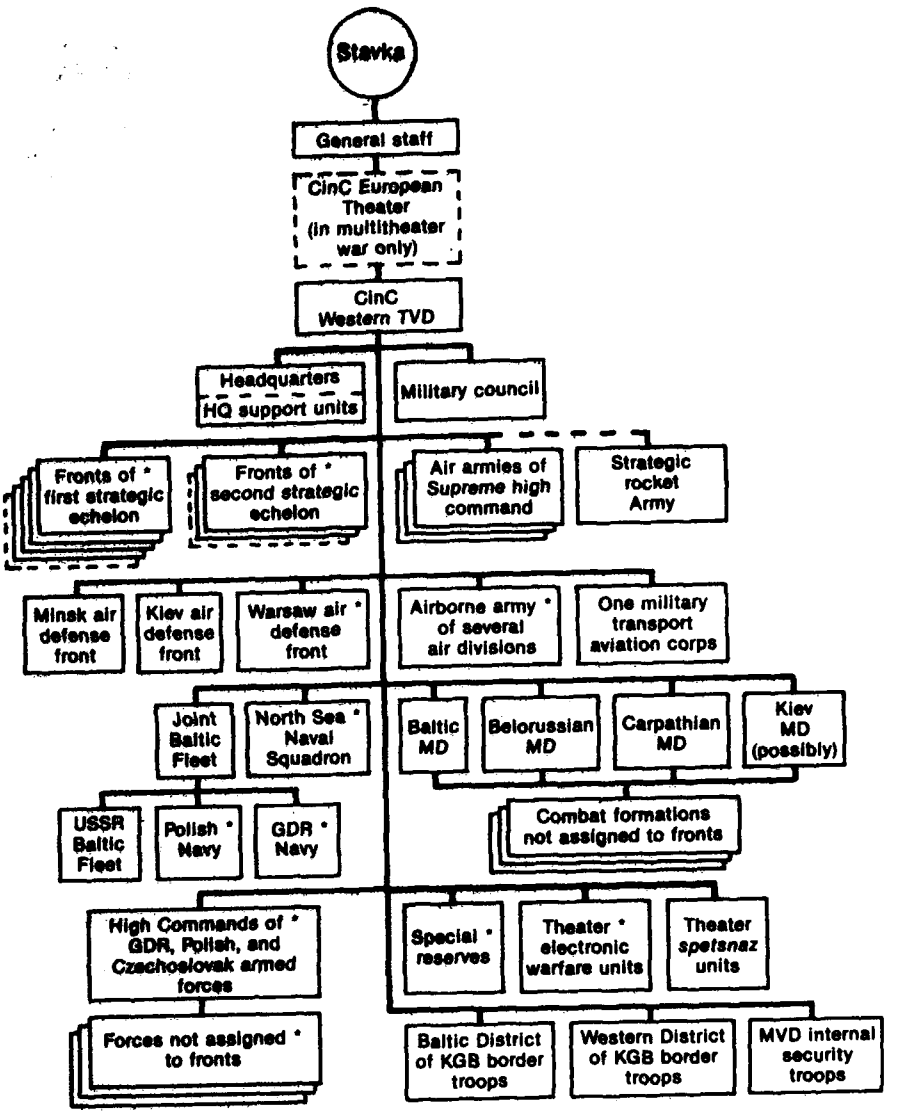
[a]Potential contribution.

[b]Counting one such Polish division, one Czechoslovakian brigade, and two German Democratic Republic airborne battalions.

[c]The remaining 34 percent consists of a Soviet Marine Brigade included into the Soviet Baltic Fleet and small German Democratic Republic units of this type.

[d]One such Czechoslovakian division plus Polish and German Democratic Republic artillery brigades and independent regiments combined into two artillery divisions.

[e]Combat aircraft only, without helicopters.



Key:
——— General and operational control
——— Operational control only
- - - - - Assistance in identifying targets for nuclear strike options
* NSWP force participation

Source: *Sadykiewicz*, Western TVD Table 8, p. 40.

Fig. 4—NSWP forces' participation in the initial wartime composition of the Western TVD

Soviet mobilization possibilities, because the East European forces are deployed in the forward area, hundreds and thousands of kilometers closer to the front line than units mobilized inside the USSR, and therefore they could achieve battle readiness much more quickly than Soviet units. Depending on where they are stationed in peacetime, the Soviet troops would require at least an additional one to two weeks to mobilize, and more to regroup to the region of combat operations.

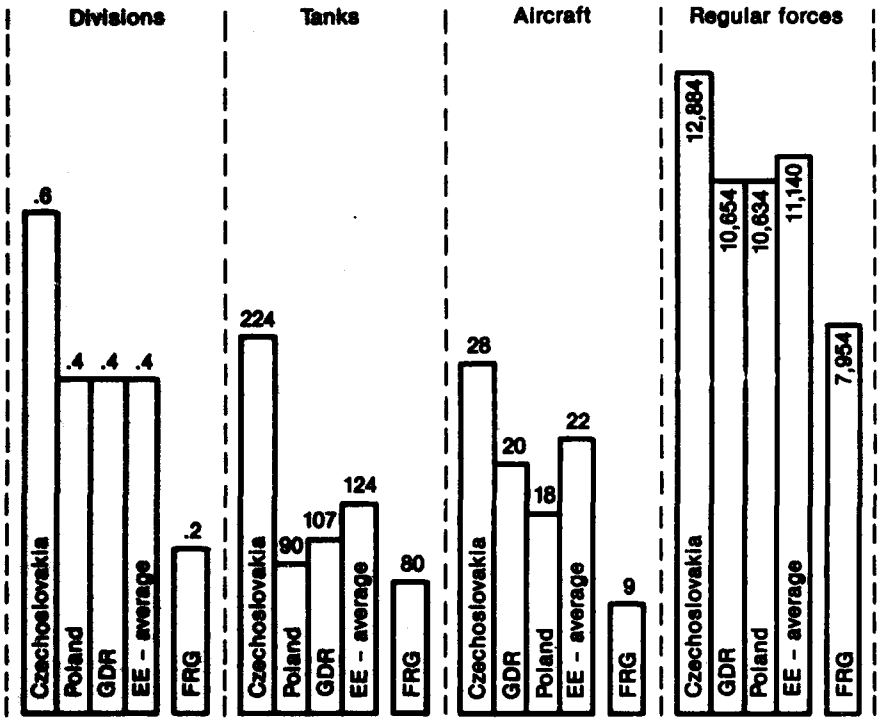
The relatively strong military efforts of the three Northern Tier East European countries are strategically very important. The three Northern Tier East European countries, having a population (69 million) approximately equal to that of the FRG (61.5 million), have a numerical force advantage over the FRG (see Fig. 5[10] and Table 15) and, indeed, over all non-U.S. Central European forces (see Table 16).

The relatively large NSWP forces in the Western TVD play an important role in the Kremlin's strategic planning. Theoretically, there are only three conditions under which the WP could wage war against NATO forces in Europe, either conventional or nuclear, regardless of the prevailing political conditions (e.g., out-of-the-blue Soviet aggression, unrest in Eastern Europe, etc.):

1. By strategic surprise, the so-called "short warning attack," which includes minimum WP mobilization and reinforcement.
2. After a short period of tension and buildup of WP and NATO forces and partial mobilization.
3. After a long period of tension and full-scale mobilization.

The most convenient condition for the Kremlin is strategic surprise. However, let us look at the forces in place that are at the disposal of the Soviet Union in the forward area in the Northern Tier: 19 divisions in East Germany, 2 divisions in Poland, and 5 divisions in Czechoslovakia—a total of 26 divisions facing NATO's Allied Forces Central Europe (AFCENT) of 22 divisions. Even with the factor of complete surprise, these Soviet forces are insufficient, in the view of Soviet military planners concerned with force ratios, to secure strategic success. If we add the 6 East German divisions and 7 Czechoslovak divisions close to the Western frontier, we have a total of 39 WP

[10]Figure 5 shows a great disproportion in numbers of divisions, tanks, and aircraft between the Czechoslovak forces and those of East Germany and Poland. The Czechs have many more, on a per capita basis, so their contribution to the WP forces appears to be relatively much greater than that of East Germany and Poland. However, the latter two countries have their own navies, and Czechoslovakia does not. Therefore, the overall numbers of regular forces of all three East European countries per 1 million population are almost identical. The defense efforts of these three countries are thus approximately equal on a per-capita basis.



SOURCE: Numbers per 1 million population: *The Military Balance 1986-1987*, IISS

Fig. 5—Defense efforts of the East European Northern Tier countries and the FRG

Table 15

COMPARISON OF MILITARY STRENGTH: EAST EUROPEAN NORTHERN TIER COUNTRIES VS. FRG

Forces	Poland, Czechoslovakia, East Germany	FRG	Ratio
Regular forces[a]	771,000	488,000	1.6 : 1
Divisions[b]	31	12	2.6 : 1
Tanks[c]	9,900	4,887	2.0 : 1
Guns, 100-mm and above[d]	6,425	2,393	2.7 : 1
Aircraft[e]	1,590	604	2.6 : 1
Warships[f]	277	192	1.4 : 1

SOURCES: Same as Table 14.

[a]Including border troops.

[b]Tank, motorized-rifle, mechanized, amphibious assault, and airborne divisions.

[c]Main battle tanks only.

[d]Including multiple rocket launchers (MRLs) and 120 and 160mm mortars.

[e]Helicopters omitted.

[f]Total major and minor warships.

Table 16

COMPARISON OF MILITARY STRENGTH: NORTHERN TIER EAST EUROPEAN FORCES VS. ALL NATO CENTRAL EUROPEAN FORCES, EXCLUDING U.S. FORCES

Forces	Total East Germany, Czechoslovakia, and Poland	Total West Germany, British Army of the Rhine, Belgium, Holland Luxembourg, Canada (European forces only)	Ratio
Divisions	31	21	1.5 : 1
Main battle tanks	9,900	7,100	1.2 : 1
Armored personnel carriers (APCs)	11,500	11,500	1.1 : 1
Artillery tubes	6,425	4,200	1.5 : 1
Combat aircraft	1,596	1,100	1.4 : 1

SOURCES: Same as Table 14.

divisions, which gives the WP an advantage of 1.8 to 1. This is still insufficient superiority. The additional deployment of 13 of the 15 Polish divisions[11] gives the WP 52 divisions to NATO's 22 and creates an advantage of 2.36 to 1. Only in such a condition could Soviet planners anticipate strategic success in a short-warning attack.

Without NSWP forces, especially Polish forces, Soviet military planning could envisage initiating war successfully only under the third condition, with less favorable prospects. These prospects would also depend on the required scale of Soviet substitution for NSWP forces on the internal fronts in Eastern Europe. This is shown in Table 17.

How would the absence of NSWP forces affect the ability of the Soviet armed forces to launch an offensive against NATO in Europe after a short period of tension and buildup of WP and NATO forces (the second of the three above-mentioned wariants)? The basis for an answer to this question is provided in Table 18, which indicates the ratio of forces in Central Europe and indicates how Moscow's superiority over NATO might diminish in the region in accordance with the "dropout" rates of NSWP forces. Somewhere at the level of scenario 6, or even earlier, the Kremlin would probably decide that its advantage had diminished to the point where its prospects to win a war would seem poor.

According to modern Soviet military doctrine, in a nonnuclear strategic offensive operation in the ETW, an advantage of 6 or 8 to 1 is required on the tactical level on the main attack axes. To achieve such superiority the operational advantage (army and front level) should be at least 3 or 4 to 1, and the strategic advantage (on the TVD level) must be at least 2 or 3 to 1.[12]

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[11]Six to 7 of the Polish divisions, which are in peacetime deployed close to East Germany, will, in this case, participate in the first echelon of the invading forces. The remaining 6 to 7 divisions deployed in the central part of Poland can be incorporated into the second echelon of these forces. The remaining 3 Czechoslovakian divisions can also be included in that echelon. Thus, the first echelon can have 42 to 44 divisions, which is about 11 armies, and the second echelon, 9 to 11 divisions, which is about 3 armies.

The 3rd and 9th Polish motorized rifle divisions are not taken into account in such a deployment because they are stationed east of the Vistula (*Oesterreichische Militaerische Zeitschrift*, May 1985, p. 463), and their peacetime combat readiness is normally very low.

These two divisions may, in the discussed case, join the troops of the Soviet Carpatian Military District, which along with the forces of the Baltic, Belorussian, and Kiev Military Districts (in total, 52 divisions, approximately 13 armies) will be the strategic follow-on echelon.

[12]See Michael Sadykiewicz, "Central Front: The Soviet/Pact Concept of the Main Attack Axis," paper prepared for Orion Research, Inc., Arlington, Va., October 1985, Chap. V. See also John Erickson, Lynn Hansen, and William Schneider, *Soviet Ground Forces: An Operational Assessment*, Westview Press, Boulder, Colo., p. 163.

Table 17

NUMBER OF SOVIET MANEUVER DIVISIONS REQUIRED TO COMPENSATE FOR THE ABSENCE OF NSWP FORCES IN CENTRAL EUROPE IN A CONFLICT WITH NATO

(Author's estimate)

Requirement	Case 1: Absence of GDR only	Case 2: Absence of CSSR only	Case 3: Absence of Poland only	Case 4: Absence of Hungary only	Case 5: Absence of GDR and CSSR	Case 6: Absence of Poland and GDR	Case 7: Absence of Poland and CSSR	Case 8: Absence of Poland, GDR, and CSSR	Case 9 Absence of GDR, Poland, CSSR, and Hungary
To replace East European forces on the external front	6	10	15	6	16	21	25	31	37
To substitute for East European forces on internal fronts	4	6	9	4	10	13	15	19	23
To protect and defend Soviet forces deployed in East European countries (in addition to those in second entry)	2	3	5	2	5	7	8	10	12
To prevent anti-Soviet uprising (in addition to those in three entries above)	2	3	4	2	5	6	7	9	11
Total divisions required	14	22	33	14	36	47	55	69	83

Table 18

RATIO OF WP TO NATO LAND FORCES IN CENTRAL EUROPE FOR CASES WITH INCREASING ABSENCE OF NSWP FORCES

Case[a]	Number of Soviet/WP Divisions, with Full Reinforcement, Available for Action on External Front[b]	Number of NATO Divisions, with Full Reinforcement, Available for Action on External Front[c]	Ratio
0[d]	129	45	2.9 : 1
1	115	45	2.6 : 1
2	107	45	2.4 : 1
3	96	45	2.1 : 1
4	115	45	2.6 : 1
5	83	45	2.0 : 1
6	82	45	1.8 : 1
7	79	45	1.6 : 1
8	60	45	1.3 : 1
9	46	45	1 : 1

[a]Cases described in Table 17.

[b]Soviet/Warsaw Pact divisions facing AFCENT forces plus Danish forces and the Schlezwik-Holstein Command include 92 Soviet divisions (30 in East European countries, 37 in Baltic, Belorussian, and Carpathian MDs, 10 from the Kiev MD, and 15 of 20 from the Central Strategic Reserve) and 37 NSWP divisions (GDR, CSSR Polish and Hungarian). Successively excluded are East European divisions and Soviet divisions attached to East European internal front missions.

[c]Counting AFCENT plus AFNORTH divisions (excluding Norwegian), in place in Europe, a total of 32 divisions, plus 12 of 15 of the North American divisions equivalent, which could be available in Europe in due course; see *NATO and Warsaw Pact Force Comparison*, NATO Information Service, Brussels, 1984, p. 7, and IISS, *The Military Balance 1987–1988*, London, 1987.

[d]In this case, all NSWP forces, except Rumania, participate on the Soviet side in a conflict with NATO.

IV. ARMAMENTS OF NSWP FORCES

THE HISTORICAL EXPERIENCE

About 40 percent of the East European forces under Soviet command in World War II were established on USSR territory; for this reason, they had to be armed entirely by the Soviets. The remaining 60 percent, established on their own national territories, could not be self-sufficient because either their countries lacked a domestic armaments industry (as in the case of Romania, Hungary, and Bulgaria) or such industries had been occupied and then destroyed by the Germans (Poland, Czechoslovakia). Therefore, Moscow had to arm these later formations as well, though on a smaller scale. Armaments delivered by the USSR to the East European national armies from 1943 to 1945 are shown in Table 19.

Throughout World War II, the USSR had a consistent policy with respect to arming its East European allies. First, the latest weapons produced in the USSR were never directly offered to the East European forces. Second, most equipment received within the framework of lend-lease from the West was retained exclusively by the Red Army. East European forces received only some U.S. Jeeps, GMC trucks, uniforms, and foodstuffs. Finally, the Soviets were selective in their distribution of armaments among different East European forces. Table 20 indicates the differences in quantity and quality of armaments delivered to the various East European forces. In each case, the decisive criterion was political rather than military.

The selective approach to East European forces could be seen in, for example, the delivery of SWT semiautomatic rifles, SU-152 self-propelled guns, IS-2 tanks, and IL-2 ground-attack aircraft to Polish forces, but not to the Czechoslovaks. The Bulgarian and Romanian armies received mostly obsolete or used weapons. Captured German weapons were doled out according to established priorities, with the newest weapons going exclusively to the Soviets. The changeable attitude of the Soviets vis-à-vis the different East European forces, regulated by perceptions of political loyalties, is especially evident in the Polish example: The Polish units formed in 1941–42[1] were eventually

[1]These units—the so-called Anders Army, composed almost exclusively of prewar Polish soldiers taken prisoner by Soviets in 1939— were formed in 1941–42 and evacuated to Iran in the fall of 1942. Later under the name "2nd Polish Corps," these forces successfully fought in Italy, in 1944–45. Of all the East European forces, this was the most anti-Soviet formation, and as will be seen, it was placed at the lowest possible degree of supply priority by the Soviets.

Table 19

NUMBER OF MAIN KINDS OF WEAPONS DELIVERED BY THE USSR TO THE EAST EUROPEAN FORCES: 1943–1945[a]

Forces	Rifles, Including Automatic	Machine Guns	Antitank (ATK) Rifles	Guns	Mortars	Tanks and Self-Propelled (SP) Guns	Aircraft
Polish	409,000	18,000	6,700	3,900	4,800	670	630
Yugoslav	200,000	15,000	3,800	1,270	4,600	70	197
Czechoslovakian	52,000	4,000	1,400	600	830	142	151
Bulgarian	29,000	2,000	300	360	310	—	—
Romanian	17,000	1,500	400	180	400	—	—
Hungarian	13,000	800	—	57	30	—	—

SOURCES: Antosyak et al., *Zarozhdenie narodnykh*; Ustinov, *Istoriia Vtoroi Mirovoi Voiny, 1939–1945*; *Istoriia Velikoi Otechestvennoi Voiny, 1941–1945*, in six volumes, Voenizdat, Moscow, 1960–1965; P. A. Zhilin (ed.), "Osvoboditel'naia missiia Sovetskikh vooruzhennykh sil v Evrope vo Vtoroi Mirovoi Voine," *Dokumenty i materialy*, Voenizdat, Moscow, 1985.

[a]All numbers rounded.

Table 20

RANK ORDER OF USSR ARMAMENT ALLOCATION TO EAST EUROPEAN FORCES: 1941–1945

By Quantity	By Quality[a]
1. Poland (1943–1945)	1. Poland (1943–1945)
2. Yugoslavia	2. Czechoslovakia
3. Czechoslovakia	3. Yugoslavia
4. Bulgaria	4. Bulgaria
5. Romania	5. Romania
6. Poland (1941–1942)	6. Hungary
7. Hungary	7. Poland (1941–1942)

SOURCES: Same as Table 19.

[a]Author's assessment.

less trusted than those created in 1943–45, and both were supplied accordingly. The perceived degrees of political reliability went hand in glove with the quality of the weapons delivered (see Table 21).

The East European forces were never given such Soviet weapons as *Gorjunov* machine guns (1943 type), 160-mm mortars, 100-mm antitank guns, or heavy (greater than 152-mm caliber) artillery.

The approximately 1,000 aircraft passed to the East European aviation units included no MiG (type 3) fighters, LAGG, or IL-10 ground-attack aircraft (at the time, the newest equipment). Heavy tanks, the IS-3s, also remained exclusively in Soviet units.

One of the most effective Soviet weapons in World War II, the so-called *Katiusha* multiple rocket launchers (M-13, TRS-82, and others), never passed out of Soviet hands. They were at times integrated with certain East European forces, e.g., with the 2nd Polish army, but they were operated by Soviet crews and remained under permanent Soviet operational control.

The same may be said of the most effective WCh high-frequency secure field telephone communication system. All East European divisional and higher headquarters got such devices, but they were operated exclusively by the Soviets. Moreover, just as in the Red Army, the special WCh units consisted of NKVD signal troops.

To sum up, the Soviet armament supply of the East European forces in World War II was dictated by political more than military criteria.

THE PRESENT SITUATION

After World War II, the Kremlin continued to apply a very differentiated policy vis-à-vis the modernization of the national armies of the Pact. As a result, there is today a great disproportion in both the quantity and the quality of the contemporary armaments of the NSWP forces—among different NSWP forces, especially the Northern Tier and the Southern Tier countries, and between these forces and the Soviet forces.[2]

Tanks. Qualitatively, more 30-year-old T-54/55 tanks are used in the East German, Czechoslovak, and Polish armed forces than in other NSWP forces, and these three elements also have relatively more T-72 tanks. Further, there is a very great disproportion in the quantity of armaments provided, even taking into account the overall numbers of ground forces in particular NSWP countries, especially tanks per

[2]See also Richard C. Martin, "Warsaw Pact Force Modernization: A Second Look," in Jeffrey Simon and Trand Gilberg, eds., *Security Implications of Nationalism in Eastern Europe*, Westview Press, Boulder, Colo., 1986.

Table 21

ESTIMATED SOVIET HIGH COMMAND ASSESSMENT OF EUROPEAN FORCES: 1944–1945[a]

(Rank order)

Political Reliability Toward Soviet Army	Maximum Total Numerical Strength	Field Army Strength[b]	Armament Quality	Interoperability	Longevity[c]
1. Polish	1. Romanian	1. Romanian	1. Polish	1. Polish	1. Czechoslovakian
2. Czechoslovakian	2. Bulgarian	2. Polish	2. Czechoslovakian	2. Czechoslovakian	2. Polish
3. Yugoslav	3. Polish	3. Bulgarian	3. Romanian	3. Bulgarian	3. Yugoslav
4. Bulgarian	4. Czechoslovakian	4. Czechoslovakian	4. Bulgarian	4. Romanian	4. Romanian
5. Romanian	5. Hungarian	5. Hungarian	5. Hungarian	5. Hungarian	5. Bulgarian
6. Hungarian					6. Hungarian

[a]Author's estimation based on Soviet writings, especially Soviet reference books on World War II and published memoirs of Soviet general officers and marshals of the Soviet Union (Zhukov, Shtemenko, Biryuzov, Poplawski, Konev and others). The Yugoslav (regular) forces are evaluated in the first and last columns only.

[b]Winter-spring 1945. Earlier, in October 1944, the order was 1. Bulgaria, 2. Romania, 3. Poland, etc.

[c]Starting with the first tactical-level East European units, established on the territory of the USSR, 1st Czechoslovakian battalion (September 1941); 1st Polish Division named T. Kosciuszko (May 1943); 1st Yugoslavian battalion November 1943, enlarged to a Brigade in May 1944); 1st Romanian Division named T. Vladimirescu (October 1943). The total, on the territory of the USSR, in 1941–1945, of established, armed, and trained East European units: 19 infantry, 5 artillery, and 5 aviation divisions, 6 infantry, 8 tank and motorized rifle, 12 artillery, 5 engineer, and other units, consisting of 555,000 men. (S. Radzievskii, "Voennoe sotrudnichestvo stran antigitlerovskoi koalitsii," *Voenno-istoricheskii zhurnal*, 1982, No. 5, p. 53.)

maneuver division. Figure 6 shows total main battle tanks in each of these countries, divided by the number of maneuver divisions.[3] Romania and Bulgaria are the only two NSWP countries still using relatively large quantities of World War II Soviet T-34 tanks (Romania has 200, and Bulgaria has 400); they have only, on average, 112 and 195 of the more modern T-54/55 tanks, respectively, per maneuver division—approximately one-third the number in the Czechoslovak army. And the gap in quantity and quality of main battle tanks between NSWP countries of the Northern Tier and those of the Southern Tier will increase. However, a rapid increase in modern (but not the newest) Soviet T-72 tanks in the East European forces has been reported. This is shown in Table 22.

Antitank Weapons. It is impossible to assess the numerical strength of the antitank weapons in the different NSWP forces because of the lack of available data. But it is known that one of the very new Soviet antitank guided weapons, the AT-4 SPIGOT, has been introduced only in the Northern Tier NSWP forces; a small number of AT-4s have been sent to Hungary, while Bulgaria and Romania have none. The relatively new Soviet-made 100-mm T-12 antitank gun is found only in the Northern Tier of the Pact.

Armored Personnel Carriers (APCs). The most sophisticated, probably most effective, APC is the BMP (infantry mechanized combat vehicle), made in the USSR and somewhat disproportionately distributed among the NSWP forces (see Table 23). Of those forces, only East Germany has received the relatively new Soviet wheeled APC, the BTR-70. The East German army also has Soviet BTR-60 APCs, while the Polish and Czechoslovak armies are fitted mainly with OT-62 and OT-64 (SKOT and TOPAS) carriers, coproduced by Poland and Czechoslovakia.

Artillery. Modern self-propelled howitzers and 122-mm and 152-mm gun/howitzers were introduced in the USSR in 1970 and were later supplied to all other WP countries except Bulgaria and Romania, which have only towed models introduced during World War II; Romania also has Soviet-built 100-mm self-propelled guns produced 40 years ago.

SS-Launchers. Table 24 shows that the GDR forces have received 18 SCUD army-level launchers, while Hungary has only nine, although both countries have six divisions. Romania, which is qualitatively in last place, has only very old types of FROG launchers.

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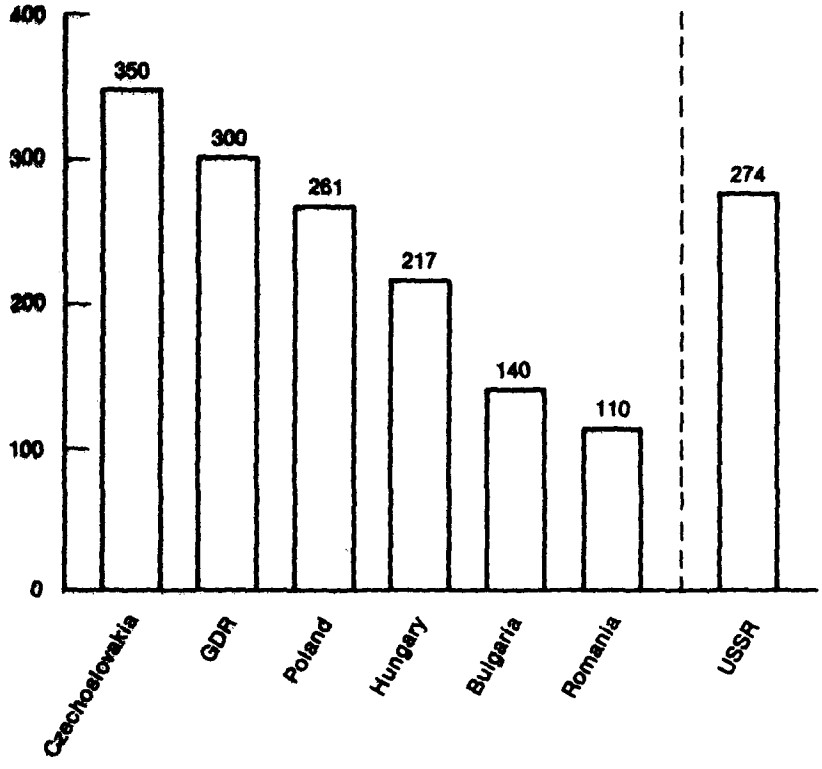
[3]Tank divisions and motorized-rifle divisions are considered "maneuver divisions." Bulgaria has five separate tank brigades, which combine into two tank divisions. Romania has three separate mountain brigades, which combine into one motorized-rifle division.



SOURCE: IISS, *The Military Balance, 1986–1987*, London, pp. 37, 49–54.

NOTE: For the purpose of comparison, all Soviet divisions and all main battle tanks (except T-34s) have been counted.

Fig. 6—Average number of tanks per NSWP maneuver division (excluding T-34 tanks)

Table 22

NUMBER OF T-72 TANKS IN NSWP FORCES: 1983–1987

Country	1983	1984	1985	1986	1987
Bulgaria	60	60	60	150	200
Czechoslovakia	—	—	—	—	500
East Germany	—	—	—	—	300
Hungary	60	30	30	60	100
Poland	50	50	50	70	270
Romania	30	30	30	30	30

SOURCE: IISS, *The Military Balance*, London, various years.

Table 23

DISTRIBUTION OF BMP VEHICLES AMONG NSWP FORCES

Country	Number of BMPs	Number of Maneuver Divisions	Average Number per Maneuver Division
East Germany	950	6	158
Czechoslovakia	1,150	10	115
Poland	1,000	13	77
Hungary	350	6	58
Bulgaria	60	10	6
Romania	0	11	0

SOURCE: IISS, *The Military Balance, 1987–1988*, London, 1987.

Table 24

DISTRIBUTION OF SS-LAUNCHERS AMONG NSWP FORCES

Country	SS FROG/SS 21 (tactical missiles)	SS SCUD (operational-tactical missiles)	Total Launchers	Launchers per Maneuver Division
East Germany	24	24	48	8.0
Poland	56	32	88	6.8
Czechoslovakia	44	27	71	7.1
Bulgaria	40	48	88	8.8
Hungary	24	9	35	5.8
Romania	30[a]	15	45	4.0

SOURCE: IISS, *The Military Balance, 1987–1988*, London, 1987.
[a]Mainly old types (FROG 2/3/5).

Antiaircraft Weapons. The picture is similar here. Relatively modern surface-to-air missiles (SAMs), such as SA-8 GECKO and SA-9 GASKIN (introduced in the USSR in 1975), are delivered to only the three Northern Tier NSWP countries, while Hungary (which recently got a few SA-9s), Bulgaria, and Romania must rely on older systems. So far, there is no evidence that the NSWP forces received the very new Soviet SA-11 launchers (introduced in 1982) or SA-13s (introduced in 1981).[4]

Helicopters. The modern Mi-8 and Mi-24 armed Soviet helicopters are also distributed very selectively. For example, six East German divisions can rely on the support of 110 armed helicopters (i.e., more than 18 per division), while each Romanian division has only 15 Mi-8 helicopters, and no Mi-24 HIND assault helicopters.

Aircraft. All NSWP air forces except that of Romania have nuclear-capable aircraft. The Polish and Czechoslovak combat aircraft are approximately equal in quality. Bulgaria is the only NSWP country to have the long-distance reconnaissance type MIG-25 (Foxbat).[5] This can be explained by the geostrategic position of Bulgaria, which may use these aircraft in intelligence missions over the Mediterranean and Near East.

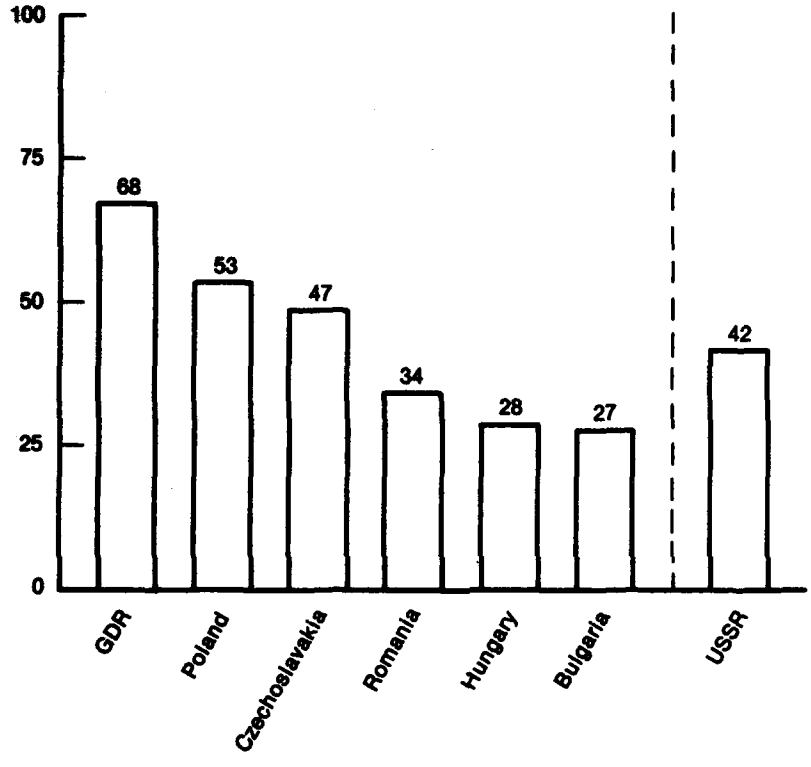
The numerical relation of aircraft to maneuver divisions is very different in the NSWP forces (see Fig. 7). The three Northern Tier NSWP forces also receive disproportionately greater aviation capabilities. Romania has more airplanes than Hungary or Bulgaria, but the quality of the Romanian planes is far below the standards of the Hungarian forces and somewhat below those of the Bulgarian Air Force. Hungarian aviation is based on MiG-21s and MiG-23s, while Romania also has 90 old MiG-17s.

Warships. Thanks to its own strong naval industry, the Polish Navy is in first place among all the NSWP navies, both in quality and in numerical size. The GDR Navy has twice as many fast attack craft and has 21 corvettes (the Polish Navy has only four), but Poland has four submarines, a division of Navy aviation, and a large force of landing-craft vessels.

In general, the priority in the distribution of modern Soviet weapons among NSWP forces (shown in Table 25) clearly indicates the rank-ordering among the NSWP forces. This table also enables the calculation of an approximate index of the value of the combat equipment of the NSWP forces in general, as shown in Table 26. Table 26 shows the Kremlin's actual hierarchical rating of the NSWP countries, in

[4]Libya has received SA-13s.

[5]See *Jane's Defence Weekly*, April 4, 1987, p. 601.



SOURCE: IISS, *The Military Balance, 1986-1987,* London

NOTE: For the purpose of comparison, all Soviet divisions and all combat aircraft (excluding naval aircraft) have been counted. For the NSWP forces, all combat aircraft, excluding naval aircraft, and all armed helicopters have been counted.

Fig. 7 — Average number of combat aircraft per NSWP maneuver division (excluding naval aircraft)

Table 25

PRIORITY IN THE DISTRIBUTION OF MODERN SOVIET WEAPONS AMONG NSWP FORCES

(Estimated rank order)

Country	Tanks	Anti-tank Wpns.	APCs	Artillery	SS Launchers	Anti-Aircraft	Helicopters[a]	Aircraft	Warships
East Germany	1	2	1	2	2	1	2	1	1
Czechoslovakia	2	1	2	1	3	3	4	3	—
Poland	3	2	3	3	4	2	5	2	2
Hungary	5	4	4	4	5	4	3	4	—
Bulgaria	4	5	5	5	1	5	1	5	3
Romania	6	6	6	6	6	6	6	6	4

SOURCE: Based on weapon types published in IISS, *The Military Balance 1987-1988*, London, 1987, pp. 47–53, 207–208.

[a]Armed helicopters (Mi-8 and Mi-24) only.

Table 26

INDEX OF COMBAT EQUIPMENT VALUE OF CONTEMPORARY NSWP FORCES

(Author's estimate)

Country	Index
East Germany	1.00
Czechoslovakia	0.95
Poland	0.90
Hungary	0.75
Bulgaria	0.70
Romania	0.50

NOTE: Estimates based on data in the tables and figures in this section, particularly Table 25.

terms of modern arms supply: East Germany,[6] Czechoslovakia, Poland, Hungary, Bulgaria, and Romania. These priorities reflect Soviet calculations about the relative importance of three factors: deployment in the first strategic echelon (East Germany, Czechoslovakia, Bulgaria, and Hungary); location in the Northern Tier; and degree of political trust. Thus, although Polish and Romanian armies are both in the second strategic echelon in peacetime, the Poles are far

[6]This calculation does not include submarines. Neither East Germany nor Romania has any such vessels.

better equipped with modern Soviet weapons than Romania[7] or Bulgaria, which actually borders on NATO countries.

Why is Bulgaria in the Pact's first strategic echelon, but below Hungary on the Soviet armaments priority list? Bulgaria's opposing NATO forces (Greece and Turkey) have relatively obsolete weapons compared with the NATO forces facing Hungary: West German, U.S., and Italian (and those of neutral Austria and Switzerland).

Nuclear Weapons. All East European forces have nuclear-capable transport and delivery vehicles, but apparently none have nuclear warheads or bombs. The potential East European share in Warsaw Pact nuclear weapons capability is in any case symbolic and constitutes less than 2 percent of overall WP delivery vehicles and less than 1 percent of megaton capacity. Thus, even if East European forces should receive nuclear weapons, they will not play a significant role in case of war. It seems probable, however, that like the *Katjusha* in World War II, nuclear weapons will remain exclusively in Soviet hands, for two decisive political reasons: First, the Kremlin must take into consideration the fact that in case of nuclear war, a Polish, Czechoslovak, or other East European general officer may hesitate before giving the order to fire a nuclear missile at a West European town. This particularly concerns East German generals who would be responsible for giving orders to attack West German towns.

Second, and more important, in a Soviet combat crisis situation (e.g., if the Soviet offensive is unsuccessful and NATO mounts a counter-offensive), nuclear weapons in East European hands could be turned against the Soviet forces. However improbable this hypothesis, Moscow must take it into consideration in its planning.

Why, then, have East European forces received nuclear delivery systems? It would have been difficult, even as a formality, to discriminate among partners of the same coalition in withholding the systems possessed by the Soviet armed forces and considered a key element of WP coalition warfare doctrine. Second, all East European delivery systems, without exception, are dual-capable and can effectively be used for either conventional warheads or bombs, which greatly increases their fire potential. In the event of nuclear war, support will be provided by Soviet nuclear forces and troops, which will make nuclear strikes for the benefit of East European troops in their offensive zones.

The USSR has and will continue to have a monopoly on all strategic weapons, including:

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[7]Romania is the sole Pact nation that possesses some Western and Chinese weapons, such as French "Alouette" helicopters and Chinese fast-attack "Shanghai" warships. But these helicopters and warships are obsolete.

- All nonnuclear mass-destruction weapons.
- Space/cosmic weapons.
- Strategic electronic war means, including all electronic countermeasures and electronic intelligence (ELINT).
- Long-range aviation.
- Nuclear-powered warships.
- Antirocket missiles.
- Airborne early warning systems.
- Heavy military transport aircraft.

The Soviet monopoly also encompasses the latest tactical weapons and equipment, such as the very new generations of tanks, guns, aircraft, helicopters, and warships. For example, since the end of the 1950s, the USSR has had three to four successive generations of main battle tanks—the T-62, T-64/72, and the T-80—while all the East European forces still have as their basic main battle tank the T-54/55 produced 30 years ago.[8] Likewise, some Arab countries have had the Soviet MiG-25 Foxbat airplane for several years,[9] yet the East European air forces except, as mentioned earlier, that of Bulgaria, have not received any of them.

Nonetheless, East European weapons, especially in the Northern Tier, are generally of average European standard and are qualitatively no worse than those of NATO's "minor" allies.[10]

East European officers know that their forces are not equipped with new generations of weapons with the same frequency as are Soviet forces. This, of course, has led to considerable dissatisfaction among East European generals and officers, who are quite aware that certain new weapons made in the USSR are being sold to Arab countries, without East European forces even seeing them.[11] Soviet marshals may

[8]A few T-72 tanks have recently been acquired by East European armies, but they are of a somewhat symbolic nature, representing only a fraction of the general tank force. The production of T-72 tanks in Poland (and possibly Czechoslovakia as well), under Russian license, started approximately 10 years after they were introduced into the Soviet Union's tank industry.

[9]Libya, for example, has had them since 1979.

[10]For example, more than 76 percent of the tanks possessed by Belgium, Denmark, Greece, the Netherlands, Norway, Portugal, and Turkey (5,127 out of 6,704) are obsolete (i.e., the Centurion, M-47, M-48, M-60A1) (IISS, *The Military Balance, 1985–1986*). The qualitative difference between this tank park and the NSWP forces tank park is very small. The same is true with respect to other weapons.

[11]The place of the NSWP countries in the Soviet hierarchy of worldwide allies and clients who are to receive modern weapons is as follows:

1. Libya and Syria.
2. WP Northern Tier countries (in order, East Germany, Czechoslovakia, Poland).
3. India, Cuba, Algeria, Iraq, and some other Arab countries.

argue that this practice of selling new weapons to other countries is advantageous to the East European forces, as it allows them to bypass successive models, even whole generations, and immediately take modern Soviet weapons—for example, T-62 and T-64 tanks never entered East European forces, so these forces have now jumped directly to the T-72 tanks. But the East European allies understand very well the drawbacks of this approach: During all the years between generation 2, say, and generation 5 of a given weapon, the East European forces are equipped with old, and sometimes obsolete, weapons. The transition period from T-54/55 tanks to T-72 tanks for Poland and Czechoslovakia was approximately 30 years, and the transition is still very incomplete.

4. WP Southern Tier countries (in order, Hungary, Bulgaria, Romania).
5. Other Kremlin allies and clients.

(Derived from data published in IISS, *The Military Balance, 1985–1986, 1986–1987, and 1987–1988.*) This ranking changes when aircraft and warships are considered. India, for example, has more modern Soviet weapons, including MiG-27M Flogger aircraft and new Soviet frigates and corvettes, than even East Germany or Czechoslovakia.

V. INTEROPERABILITY OF WARSAW PACT FORCES

East European armies closely follow Soviet military standards for combat structure (wartime TO&E), operational art and tactics, training, armaments and equipment, logistics systems, principles of troop leadership, and, above all, political indoctrination. Most high-ranking East European officers have been trained at Soviet military academies;[1] divisional commanders and those above them complete a two-year course at the *Voroshilov* Soviet General Staff Military Academy, which is one of the main centers for the integration and unification of Pact military doctrine. Future Soviet NSWP force liaison officers study at East European military academies, where they complete three- to four-year courses. East European officers, especially those on the operational level (front-army-fleet-operational, naval, task force), have considerable practical experience in Soviet/East European joint command staff exercises and other joint training measures.

Nonetheless, WP interoperability is far from perfect, and some constraints on interoperability may seriously limit the effectiveness of coalition warfare. The Soviets must give special attention to the following aspects of WP interoperability, in order of importance:

- The multinational factor
- Reliability
- Disparity of combat capabilities
- Confidence
- Coordination
- Logistics

THE MULTINATIONAL FACTOR

NSWP countries are not simply puppets of Moscow. The Kremlin's interests and those of the East European leaderships in the military area are confluent, but not identical. The following differences emerge in Soviet-East European military relations:

- Moscow favors quantitative expansion of NSWP forces, while the East European governments tend to try to reduce their defense budgets.

[1]Romanian officers have been an exception for many years.

- East European countries are considerably less interested in any conflict with NATO than is the USSR. The East Europeans have nothing to gain by Soviet aggression, even if the Pact were to win such a war; they can only sustain enormous human and material losses and become even more dependent on Moscow.
- The East European countries are also less committed to use of nuclear and other mass destruction weapons, for the same reasons.
- Moscow is working to reduce the operational autonomy of NSWP forces in case of war, while East European leaderships are trying to increase it up to national front-level commands. (This is discussed in Sec. VII.)

Despite the inequality of the Pact nations, which are dominated by the USSR,[2] Moscow cannot rule by fiat. Agreement, if only pro forma, is the basis for Soviet-NSWP relations. This presents a potential difficulty, since the USSR must, to some extent, coordinate its moves with the NSWP countries in crisis or wartime. A wartime situation would, by force of events, create a need to adjust and revise agreed plans, which in turn would require new intercoalition agreements. This constitutes serious ballast for Moscow, particularly in wartime conditions, when time is extremely important, and the frequency with which decisions of strategic importance must be made would be the same if not greater than it was in World War II on a tactical level.

Thus, Moscow will often prefer to inform the leaderships of the East European countries about important decisions post facto. However, this will further reduce confidence and understanding and will raise suspicions vis-à-vis Moscow, thus increasing the time needed to agree on successive actions.

On the other hand, the Soviets recently demonstrated how they would try to manage the multinational factor in crisis and war. Colonel Kuklinski[3] described the establishment of the Polish Front headquarters near Warsaw in the critical days of the Polish crisis in spring 1981. This headquarters was independent of the Polish general staff and other national authorities, being operationally subordinated directly to Marshal Kulikov, the Commander in Chief of WP forces. The Polish Front was commanded by General Molczyk (thought to be more submissive to Moscow than Jaruzelski), and for all practical

[2]See *The Warsaw Pact Command Structure in Peace and War*, op. cit., Sec. IV.

[3]Interview with Colonel Ryszard J. Kuklinski, *Kultura*, Paris, April 1987, pp. 3–57. A defector to the West, Col. Kuklinski was chief of the department for strategic planning in the Polish general staff until November 1981.

intents and purposes, it took over the command of nearly all Polish land and air forces.[4]

RELIABILITY

In World War II, the USSR had few reliability problems, because most of the East European forces were joined to the Soviet forces in the last stages of the war, when there was no longer any doubt that the Germans had lost and the Red Army would be victorious. During this period, the Western Allies avoided all contact with the East European forces. The Yalta Agreement recognized that these forces, like the East European countries, had fallen under Soviet domination.

Nevertheless, the Soviets took measures to secure absolute political loyalty. First, they ensured the loyalty of the Polish officer corps by having Soviet officers control all the key Polish army posts, without exception. Many Soviet officers also served as "instructors" in the Czechoslovak Corps. The 1st and 2nd Romanian Divisions, formed on Soviet territory and consisting primarily of former servicemen of the Romanian units on the Eastern Front who had been prisoners of war, were also commanded by Soviet officers. After the Red Army liberated Romania, the Soviets demanded that the new Romanian government dismiss 71 generals, 120 colonels, and many lower-ranking officers. They were replaced by generals and officers nominated by the leadership of the Romanian Communist Party. Even more radical personnel changes took place in the Bulgarian Army. As soon as the Red Army entered the country, virtually all the commanders of armies, corps, divisions, and brigades were dismissed, along with the majority of regimental commanders; they were replaced by commanders of the pro-Communist partisan units and political emigres from Bulgaria who were living in the USSR.[5]

Second, all the East European forces had Soviet-style bodies of political officers.[6] Although the political units were disguised under different names in the different armed forces, their essential mission was always to ensure loyalty to the Red Army. In some militaries, including the Polish army, the deputies of commanders for political affairs held permanent posts (according to the TO&E), even on the platoon level; this was never the case in the Soviet Army.

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[4]Ibid., p. 33.

[5]See Antosyak et al., *Zarozhdenie narodnykh*, p. 247.

[6]The last force to join this system was the Royal Romanian Army, which did not have political commissars until March 1945.

Third, in the Polish, Czechoslovak, and some of the Romanian forces, the counterintelligence service was wholly in Soviet hands. It consisted of detachments of SMERSH (Soviet Military Counterintelligence), subordinated on the highest level to Beria, the head of the Soviet NKVD. In the remaining Romanian and Bulgarian forces, counterintelligence tasks were performed by local Communists working for the Soviets.

In addition, very strong front-level NKVD forces called *Zagraditelnye Otriady* (blockade detachments) were positioned to open fire immediately on any East European units that attempted to revolt.[7] They fought against desertion and made mass arrests of members of the non-Communist resistance movement (primarily in Poland and Czechoslovakia).

The reliability of NSWP forces in a major conflict with NATO in Europe under present conditions would be tempered by five factors: uncertainty, allocation, limitation of missions, adjacent troop compatibility, and rear political environment. These are discussed below.

Uncertainty

Soviet troops in East European countries are generally hated by the local populations. Soviet leaders are, of course, well aware of this. They also know that if NATO should have wartime successes, there is a great likelihood of East European units going over to the NATO side. The Soviets may not see a serious threat to themselves in this, because of the crushing numerical superiority of Pact, or even Soviet forces over those of NATO, and because they plan for a war that will be effected in blitzkrieg style, enhancing the reliability of their East European allies. However, it is impossible to be strong on all parts of the front at all times, even with numerical superiority. In certain sectors, NATO may take a strategic initiative and go into an effective counteroffensive. If there were some East European forces in these sectors, their resistance would be relatively weaker than that of Soviet forces, and they might even surrender intentionally.

Thus, the Soviet leadership must have its own additional Soviet reserves on the East European axes of operations, to seal any gaps that might appear due to the uncertain behavior of East European troops.

[7]There were, in fact, some isolated instances of revolt by units of East European forces. During its formation in the fall of 1944, most of the Polish 31st Infantry Regiment revolted against its Soviet commanding officers. Many Polish soldiers and junior officers holding arms in serried ranks deserted. By order of the Supreme Commander of the Polish Forces, Marshal Zymierski, this regiment was "permanently struck off" the register of Polish units (Gen. Ignacy Blum, "Sprawa 31 pulku piechoty," *Wojskowy Przeglad Historyczny*, Vol. 10, No. 3, 1965, pp. 40–73).

Moscow will try to deploy East European forces on those directions in which the success of Pact armies is most expected.

Allocation

Dale R. Herspring and Ivan Volgyes[8] have evaluated the reliability of the individual East European forces in a WP attack on NATO, taking into account both short- and long-term operations, further subdivided into successful and unsuccessful operations. They also stress another important element, namely, that the degree of reliability depends on which opponents individual East European countries are fighting during an external offensive.

The practical conclusion that can be drawn from such evaluations is almost certainly taken into account in WP military doctrine and the consequent plans for the use of the East European forces in wartime: As far as possible, but probably not at all cost, each East European army should be matched with a "suitable" NATO opponent, according to the evaluation in Table 27.

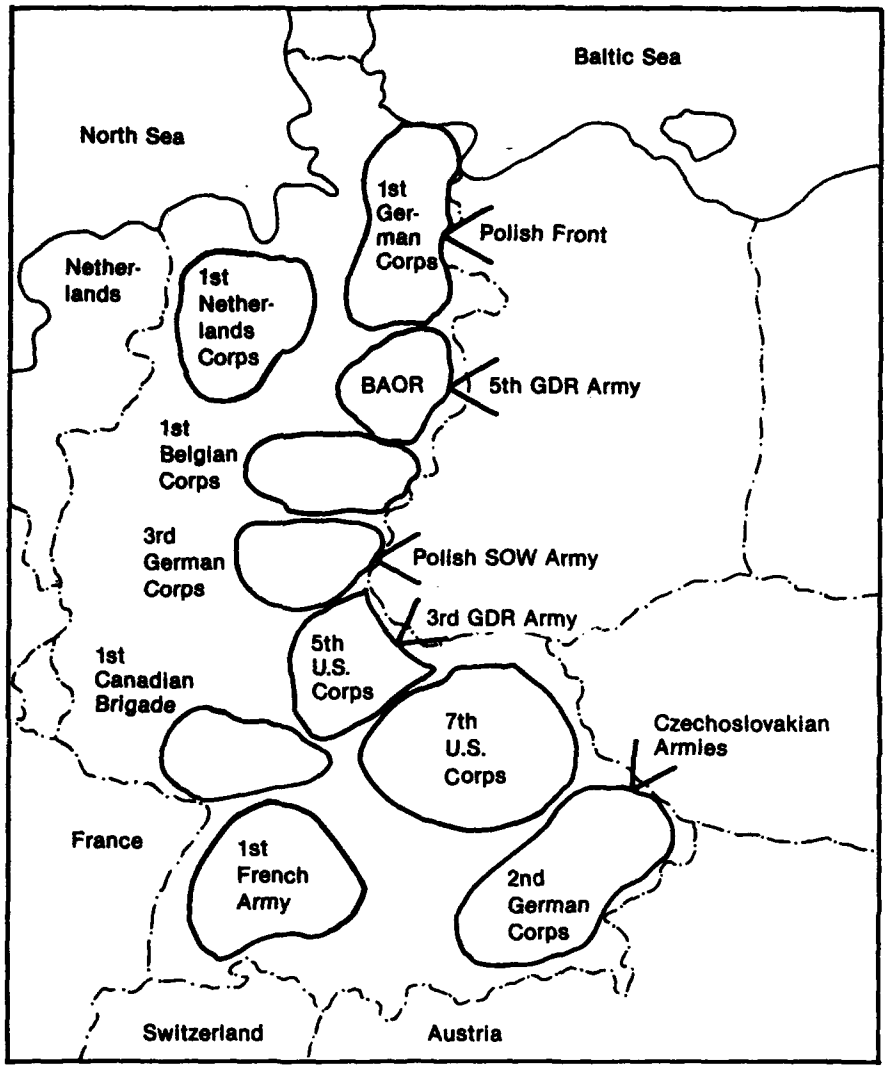
Taking into account the projected deployment of NATO forces in the event of war and the geographic operational peacetime deployment of the individual East European forces, it can be assumed that these forces might be used as shown in *Fig. 8*.

Table 27

ESTIMATED EAST EUROPEAN RELIABILITY IN A WARSAW PACT ATTACK ON NATO

	Reliability		
NATO Opponent	Poland	East Germany	Czechoslovakia
USA	Very low	Medium	Very low
West Germany	Medium	Very low	Medium
Britain	Low	Medium	Low
France	Low	Medium	Medium-low
Denmark	Medium-low	Medium-low	Medium-low
Belgium	Low	Medium	Medium-low
Netherlands	Medium-low	Medium	Medium-low
Norway	Medium-low	Medium-low	Low
Canada	Very low	Medium	Very low

[8]"Political Reliability in the Eastern European Warsaw Pact Armies," *Armed Forces and Society*, Vol. 6, No. 2, Winter 1980, p. 289, Table 3.



NOTE: The Polish Front consists of 2 Polish armies (composed of forces from the Pomeranian and Warsaw military districts, POW and WOW) and 1 to 2 Soviet armies. The deployment of the NATO forces was adapted from *Allgemeine Schweizerische Militarzeitschrift*, No. 3, 1980, and *NATO Fifteen Nations*, Special issue, February 1981.

Fig. 8 — An estimated variant of the Soviet concept of wartime allocation of East European forces in the Northern Tier

This use of East European forces is, of course, only one of many possible variants. Several other important factors would be taken into consideration, including the circumstances of war initiation and the positions of the various East European armies in the strategic grouping of WP forces at the outbreak of a war. For instance, if the Polish armed forces are still deployed on Polish territory when war breaks out, they will obviously not have time to attack the 1st German Corps, as shown in Fig. 8, and will be committed to the battle as part of the second strategic echelon into the rear of the NATO defense grouping. Meanwhile, the original deployment of the NATO forces shown illustratively in Fig. 8 will undergo considerable changes, and these will be taken into account accordingly. Application of the Soviet concept of "suitable" counterpartner allocation for NSWP forces would be very difficult once war had broken out, especially under conditions of frequent changes in battle situations, rapid offensive advance rates, and great maneuverability of military operations on the modern air-land battlefield.

Limitation of Missions

A third issue of East European reliability, related to the two above, is the necessity of limiting combat tasks in depth. For example, it is very doubtful that the Soviet leadership would risk using East European tank divisions in front-level operational maneuver groups (OMGs).[9] These divisions, directed at the deep NATO rear, without "elbow-to-elbow" contact with Soviet divisions, could in such circumstances go over to the NATO side, even if the Pact had the general strategic advantage at a given stage of the war. This also applies, perhaps to a lesser degree, to such combat actions as deep airborne and sea-landing operations, "Spetsnaz"-type actions, and long-range land-reconnaissance operations. The Soviets would be very reluctant to entrust these types of combat missions to East European troops.

Adjacent Troop Compatibility

In the event of a war with NATO, the Soviet High Command would probably endeavor to avoid placing traditionally mutually hostile East European troops next to each other. For example, placing Hungarian and Romanian units or Polish and East German units together as direct "neighbors" could create a situation similar to that which existed during the battle around Lenino in October 1943, when the Polish 1st

[9]OMGs are discussed in Michael Sadykiewicz, *Western TVD*, op. cit.

Division attacked successfully and moved forward while both its Soviet neighbors (the 42nd Infantry Division on the right and the 290th Infantry Division on the left) did not advance at all, even though they had the same combat support and the same tasks.[10]

Rear Political Environment

In case of war, the political hostility of the populations of the East European countries to Communism and the Soviet Union could be expressed in disobedience to orders of the military administrations (national, coalitional, or Soviet), ranging from passive sabotage to active antiwar and anti-Soviet actions. The territories that are strategically most important to the Soviet armed forces happen to be those of the most anti-Soviet nations: Poland, East Germany, and Czechoslovakia. These countries, especially Poland, will require additional Soviet internal security troops of the KGB and MVD type in the event of war. Soviet forces in all the East European countries will find themselves frequently in unfriendly or hostile political environments.

In peacetime, this factor is less relevant, since the Soviet Groups of Forces abroad are isolated in their barracks and training camps (except during certain propaganda functions, which politically selected local military groups are delegated to attend). In wartime, however, the density of Soviet troops in East Europe will increase greatly, and contacts with local populations will be unavoidable and constant. This situation could seriously weaken the morale of Soviet soldiers.

DISPARITY OF COMBAT CAPABILITIES

Another factor affecting interoperability is the disparity between East European and Soviet troops in equipment, nuclear support, training, and most of all, *combat willingness*. This last aspect is possibly the most important. It is undeniable that in case of a major conflict with NATO, the average East European soldier will be considerably less motivated to fight than the average Soviet soldier. The East European soldier will execute orders, advance, and open fire on the NATO opponent, especially in a situation where the Pact forces are enjoying success. However, commands will be executed more slowly, less

[10]Soviet and Polish historiography have failed to explain this strange case. In the view of the Polish soldiers (the present author fought at Lenino), the explanation was Soviet hostility to Poles. See M. Sadykiewicz, "Tajemnice bitwy pod Lenino [Secrets of the battle over Lenino]," *Tydzien i Dziennik Polski*, London, July 9, 1983. This was the first and last such case in the history of Polish-Soviet combat brotherhood during 1943–1945.

precisely, and less effectively than they would be by the average Soviet soldier. The East Europeans will also have smaller scope for personal initiative to execute delegated tasks well.

Objectively, East European equipment is of poorer quality than Soviet equipment. Most basic weapons (such as main battle tanks, combat aircraft, radio electronics) are at least one generation older, as described in Sec. IV. Finally, the level of *combat training* of the East European forces is much lower than that of the Soviet troops stationed in East European countries; these troops are the elite of the USSR armed forces, and in peacetime they are not distracted by extramilitary tasks,[11] as are the East European forces.

Maneuverability and mobility of East European forces will be considerably lower than that of the Soviets, because of the quantitative and particularly qualitative inferiority in equipment (cross-country vehicles, amphibious vehicles, air transport, etc.). National *fire support* will also be weaker, because East European forces have fewer fire support units (aircraft, helicopters, long-range guns, etc.), both absolutely and relatively. Also, they will have no organic nuclear warheads, even in a nuclear phase of war.

The great disparity between Soviet and East European capabilities should have important consequences with regard to the operational and tactical use of the East European forces in a joint Pact offensive against NATO, especially in the conventional phase of a major conflict in Europe (see Table 8). First of all, the Soviet General Staff must decide whether to give the East European divisions and armies the same offensive frontages in wartime as those of the Soviet forces, or much narrower ones, according to the East European capabilities. Having only 30 to 75 percent of the combat capabilities of Soviet divisions, East European divisions cannot reach the same advance rates in an offensive if they have the same offensive frontages and will successively drop behind their Soviet counterparts. This is illustrated in Table 28.

Obviously, many different factors affect offensive advance rates, including terrain, enemy strength and resistance, and combat and logistic support, so in some circumstances, the advance rates of the East European forces may be equal to or even greater than those of Soviet forces. But, as a rule, East European forces having approximately the same combat tasks as adjacent Soviet forces in the same or similar terrain and against the same or a similar enemy in terms of strength and resistance will progress more slowly, and on average, their offensive

[11]Such as agricultural and other labor intended to support the national economy, participating in state administration (e.g., in Poland since 1981), etc.

Table 28a

ESTIMATED SOVIET/EAST EUROPEAN OFFENSIVE ADVANCE RATES INSIDE THE NATO DEFENSE SYSTEM: GENERAL RATES

(Nonnuclear theater war, main axis, first five days of hostilities, Northern Tier)

NATO Defense System Element	Soviet Advance Rate (km/day)	East European Advance Rate (km/day)
Covering force area	20–30	12–18
Tactical defense zone		
Main battle area	10–20	6–12
Divisional rear area	15–25	9–14
Corps rear area	30–40	18–23
Army group area	50–70+	30–40

Table 28b

ESTIMATED SOVIET/EAST EUROPEAN OFFENSIVE ADVANCE RATES INSIDE THE NATO DEFENSE SYSTEM: DAILY TOTAL

(In kilometers)

	Soviet Forces		East European Forces		
Day	Daily	Total from D-Day	Total Daily	Difference from D-Day	Total
D-Day	25	25	15	15	10
D+1	15	40	9	24	16
D+2	20	60	12	36	24
D+3	35	95	21	57	38
D+4	60	155	37	94	61

NOTE: East European forces advance capabilities are assumed to be 61 percent of Soviet capabilities (derived from Table 8). East European forces are assumed to advance in Soviet-size frontages, as shown in Tables 29 and 30. Soviet advance rates are taken from Sadykiewicz, *Western TVD*, Table 14, p. 80.

tempo will gradually fall further and further behind that of the Soviet units.

This could seriously disrupt the Pact's overall offensive plans because of the East European forces' relatively great numerical contribution to the Pact. Therefore, the Soviet command will probably give its East European allies much narrower offensive frontages, according to their real capabilities. This possibility is shown in Tables 29 and 30.

However, even with narrow offensive frontages, the East European forces cannot be guaranteed to finish each offensive operation neck and neck with adjacent Soviet forces. East European forces have far less mobility. It is obvious that the 30-year-old T-54/55 tanks have much poorer cross-country mobility than, say, the new T-80 tank. The same holds for APCs, the old towed guns, etc. The East European forces will thus need relatively stronger technical, logistic, and engineering support. It seems doubtful that the Soviets will provide this at the expense of their own units. One solution might be to employ East European forces not on the main offensive axis but on the secondary directions, and not in the first, but in the second and third echelons. We will examine this option in Sec. VI.

In summary, in comparison with Soviet forces, East European forces will require:

- Narrower offense frontages or defense sectors.
- Shallower combat tasks.
- Lower norms, in terms of tempo for offense, pursuit, river crossing, etc.
- Greater scope of combat service support on the part of Soviet forces.

CONFIDENCE

The Soviet Supreme High Command and the Soviet High Command in the TVD will have less confidence in East European commands than in Soviet ones. Therefore, military directives in preparation for a conflict, which should be maintained in secrecy from NATO for as long as possible, will be communicated to East European national commands last—or, at any rate, much later than to the respective Soviet commands. In peacetime, these directives will comprise primarily war plans, i.e., operations, mobilization, strategic movements, etc., in relation to Soviet forces and other neighboring NSWP forces designated to operate on the territory of a given country at the moment of outbreak of war. After the beginning of war, the military directives will concern the application of surprise at the strategic and operational level.

Table 29

ESTIMATED SCOPE OF OFFENSIVE FRONTAGES BY SOVIET AND NORTHERN TIER EAST EUROPEAN DIVISIONS

(Nonnuclear theater war, initial phase)

Division	Mode of Initial Offensive			
	Short Warning Attack		After a Period of Tension	
	Zone of Offensive (km)	Breakthrough Sector (km)	Zone of Offensive (km)	Breakthrough Sector (km)
Soviet division[a]	20–40	5–10	15–30	3–6
East European tank division, Category 1	15–30	4–8	11–23	2.5–5
East European tank division, Category 2	11–22	3–6	8–17	2–3
East European motorized rifle division, Category 1	13–26	3–7	10–20	2.5–4
East European motorized rifle division, Category 2	10–20	3–5	8–16	2–3
East European motorized rifle division, Category 3	8–16	2–4	6–12	2–3
East European reserve division	(b)	(b)	5–10	2–3

SOURCE: The frontages for Soviet divisions taken from Sadykiewicz, *Western TVD*, Table 13, p. 78. The frontages for the East European divisions are derived from Table 24.

[a]A Soviet tank and/or motorized rifle division, Category 1.

[b]No East European reserve division participation.

Table 30

ESTIMATED SCOPE OF OFFENSIVE FRONTAGES BY SOVIET AND NORTHERN TIER EAST EUROPEAN ALL-ARMS ARMIES

(Nonnuclear theater war, initial phase)

	Mode of Initial Offensive			
	Short Warning Attack		After a Period of Tension	
Army	Zone of Offensive (km)	Breakthrough Sector (km)	Zone of Offensive (km)	Breakthrough Sector (km)
A Soviet all-arms army	80–200	20–30	50–100	10–20
A Czechoslovak all-arms army	41–82	9–20	31–93	7.5–13
A Polish all-arms army	34–68	9–18	26–78	6.5–10
An East German all-arms army	26–65	6–14	25–75	7–11

NOTE: The following strength and initial operational formation of the all-arms armies are assumed:

Army	TD, Cat.1	TD, Cat.2	MRD, Cat.1	MRD, Cat.2	MRD, Cat.3	Reserve Divisions	Total
A Soviet army							
1st Echelon	1	—	2	—	—	—	3
2nd Echelon[a]	1	—	1	—	—	—	2
A Czechoslovakian army							
1st Echelon	—	1	2	—	—	—	3
2nd Echelon[a]	1	—	1	—	—	—	2
A Polish army							
1st Echelon	—	1	1	1	—	—	3
2nd Echelon[a]	1	—	1	—	—	—	2
An East German army							
1st Echelon	—	—	2	—	—	1	3
2nd Echelon[a]	1	—	—	—	—	1	2

NOTE: TD = tank division; MRD = motorized rifle division.
[a]Includes the operational maneuver groups (OMG).

Soviet military doctrine, like that of the U.S. armed forces, prefers that a strike, in terms of time, place, forces, and manner, must take the enemy unprepared. To ensure surprise, secrecy about time and place must be maintained up to the last moment. The Soviets would probably notify the East European forces immediately before a surprise attack, or even post facto, after deployment. This constraint can decrease the ability to exploit the consequences of a surprise attack.

COORDINATION

Interaction

Boundaries between the forces of different nations are, in the Warsaw Pact just as in NATO, particularly vulnerable to enemy exploitation. The interaction among forces of different Pact nations must be carefully organized, and for each operation, mutual liaison teams must be designated. Such functions as recognition of friendly and enemy forces, lines (or areas) of opening and transferring artillery fire, rocket troops, helicopters, aviation, and maintenance of communications among the various Pact forces must be precisely organized.

Language

Russian, the Pact command language, is quite well known by East European officers (except Romanian officers); all those above the rank of captain have a working knowledge of Russian, including all special military terms. However, most East European officers do not know other East European languages than their own, because the Pact is dominated by the Soviets who wish to eliminate close links among neighboring East European forces. For example, very few Polish officers speak German or Czech, and even fewer know Hungarian or Romanian.

Liaison

Effective liaison is now especially important, perhaps even more than it was during World War II, due to two new factors: the possibility of using mass-destruction weapons, and the likelihood of rapid and sudden changes in the battle situation.

Cross-Attachment

Cross-attachment denotes the subordination of East European units to other national Pact forces. Two principles are binding: First, maneuver forces (e.g., tank and motorized rifle troops) cannot be cross-attached below division level,[12] except under compulsion of an extraordinary combat situation when no other option exists. Second, as far as possible, in cross-attachment, antagonistic allies should not be subordinated to one another (e.g., Polish and East German, or Hungarian and Romanian).

LOGISTICS

Standardization of Equipment

Even though equipment standardization in WP forces is incomparably greater than in NATO, all East European forces have some equipment that no other country has—for instance, the Czechoslovak multiple rocket launcher "Tatra T-813," or the Polish-Czechoslovak-made APC OT62–64 (also known as SKOT and TOPAS). Most important, as mentioned above, East European military equipment is considerably older than that of the Soviet armies stationed in East Europe. In this situation, interaction between two different East European forces becomes easier than between East European and Soviet forces. At any rate, lack of equipment standardization complicates planning of combat operations, supply of ammunition[13] and spares, and servicing of combat equipment in field conditions.

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[12]This means that a regiment from a tank or motorized rifle division cannot be taken out of a national division and operationally subordinated to another East European or Soviet division. This is a general constraint applicable to armies around the world. Each division has organic logistics, transport, medical, signal, technical services, and other units designed to support only the organic subordinated units. Each additional motorized rifle or tank unit above the TO&E complicates drastically both the command and control capabilities, logistics, and technical and medical support. Artillery, sapper, and other units temporarily detached from a higher echelon for combat support of maneuver divisions for a given operation arrive with their own command, control, and communications (C^3) bodies, logistics, and other support units and therefore do not burden the division.

Moreover, weapons and equipment standardization is, in most armies, organized within the divisional level. This means that two tank divisions of the same army may have various tanks and other combat and support vehicles, various calibers of guns, etc. Thus, a cross-attachment of units between these two divisions can prove disastrous on the battlefield.

[13]At present, the Pact is equipped with the last four generations of tanks (T-54/55, T-62, T-64/72, T-80), which have different-caliber cannons (100-mm, 115-mm, and 125-mm). In turn, each of these calibers has five to six types of shells, resulting in a combination of 15 to 18 different types of tank shells, plus the shells for the latest Soviet tank, the SFT-1 with a 135-mm cannon.

Supply System

The supply system of the East European forces is geared toward wartime supply from their home countries. This complicates the planning of combat operations in a coalition war, since constant attention must be paid to ensure that East European forces do not depart geographically from the chain to their home territory and that East European and Soviet forces do not cross lines of maneuver, supply, and evacuation.

The limits on WP interoperability discussed above constrain the operational deployment of NSWP forces, as analyzed in the following section.

VI. THE OPERATIONAL ROLE OF NSWP FORCES

ECHELONMENT

In World War II, the East European forces under Soviet command were included in all levels of Soviet strategic echelons, as shown in Table 31. The data in this table indicate two important facts concerning Moscow's approach to the East European forces at that time. First, the Soviet High Command preferred to hold East European forces in the front-line combat area—specifically in the first echelons of the army in the field—for as long as possible. Second, East European troop combat engagement was extremely intense. The ratio of combat to noncombat services in the 1st Bulgarian Army reached 28 to 1. Soviet writings on troop participation in World War II omit exact figures, but the participation intensity of East European formations, once they reached battle readiness, was apparently at least equal to that of the Soviet Army.

Under present conditions, it can be expected that the East European forces of the Northern Tier would be used in the front-line combat areas with the same or even greater intensity than was the case in World War II. However, the circumstances of war initiation could act as a brake on the Soviet tendency toward the mass use of East European troops in the first echelons of the assault forces. This is indicated in Table 32, which deals with the period directly preceding the outbreak of war and the first phase of the initial war period. In later phases of war, the Soviet General Staff and local Soviet commanders on the strategic level would be expected to deploy East European forces constantly in the first line of battle, just as they did in World War II. In addition to alleviating the burden of the Soviet forces and thereby decreasing their battle losses, such intensive deployment of East European forces also has a political purpose, which is discussed below.

OPERATIONAL EMPLOYMENT

In World War II, the Soviet front commanders usually preferred to push East European formations in secondary rather than primary offensive directions. As shown in Table 33, only two of the East European armies and independent corps taking part in 23 front-level operations were on the main offensive axes. Generally speaking, there were

Table 31

THE PLACE OF EAST EUROPEAN FORMATIONS IN SOVIET STRATEGIC ECHELONMENT, 1944–1945

(The most typical formations)

Formation	Date Combat Readiness Achieved	First Strategic Echelon Duration[a]			Second Strategic Echelon or Deep Rear Area Duration[f]	Duration of Combat/ Noncombat Service		
		First Operational Echelon[c]	Second Operational Echelon[d]	Rear[e]		In Field Army[b] (months)	In Rear Areas (months)	Ratio
1st Polish Army	3/31/44	7/25/44-1/17/45 1/29/45-5/9/45 (9 mos)	5/15/44-7/25/44 1/18/45-1/28/45 (2.6 mos)	4/29/44-5/14/44 (0.5 mo)	3/31/44 - 4/28/44 (1 month)	11.6	1.5	7 : 1
1st Bulgarian Army	9/10/44	9/17/44-5/9/45 (7.2 mos)	—	9/10/44-9/17/44 (0.25 mo)	—	7.2	0.25	28 : 1
2nd Polish Army	1/19/45	4/4/45-5/9/45 (1.1 mos)	2/20/45-4/3/45 (1.5 mos)	1/19/45-2/19/45 (1 mo)	—	2.5	1.0	2.5 : 1
1st Czech Corps	8/1/44	9/1/44-5/9/45 (8.3 mos)	—	8/1/44-9/1/44 (1 mo)	—	8.3	1.0	8.3 : 1
4th Romanian Army	9/1/44	9/7/44-5/9/45 (8 mos)	—	9/1/44-9/6/44 (0.2 mo)	—	0	0.2	16 : 1

SOURCES: Same as in Table 19.

[a]Inside the grouping of Soviet first-line *fronts*.

[b]Field army *Deistvuiushchaia Armiia* (units in the combat zone).

[c]Armies of first echelon of the *fronts*.

[d]Armies of the second echelon or operational reserves of *fronts*.

[e]Inside the borders of first-line *fronts* but not included in their operational groupings.

[f]In the rear, outside the area of first-line *fronts*.

[g]Formally only; in fact, poorly trained.

Table 32

ESTIMATED PLACE OF EAST EUROPEAN FORCES WITHIN THE STRATEGIC ECHELONMENT OF THE WESTERN TVD

Elements of Echelonment	First Strategic Echelon			Second Strategic Echelon		Intermediate General Purpose Reserves
	First Echelon Fronts		Second Echelon Fronts	Third Echelon Fronts	Warsaw Air Defense Defense Front	
	First Operational Echelon	Second Operational Echelon				
Short Warning Attack						
GDR forces	3–4 divs, most naval units	2–3 divs, Air Force, some naval units	None	None	Home Air Defense Forces	Operational forces do not commit in first and second strategic echelons
Czech forces	4–6 divs, airborne brigade	2–3 divs, Air Force	1–4 divs, some aviation units	None	As above	As above
Polish forces	None	Amph. div, airborne div	10–11 divs, Air Force, Navy	2–3 divs	As above	As above
Attack After Partial Mobilization						
GDR forces	All 6 divs, most naval units	Air Force, some naval units	None	None	As above	As above
Czech forces	7–8 divs	Air Force	2–3 divs	None	As above	As above
Polish forces	13 divs, airborne div	Air Force, amph. div	None	None	As above	As above
Attack After Full-Scale Mobilization						
GDR forces	All 6 divs, most naval units	Air Force	None	None	As above	As above
Czech forces	6–divs,	3–4 divs, Air Force	None	None	As above	As above
Polish forces	9–10 divs, Navy airborne div	3–4 divs, Air Force amph. div	None, some naval units	None	As above	As above

NOTES: Nonnuclear war is assumed. Divisions consist of ground divisions plus army and above command support units. The terms "Second Echelon Fronts," "Third Echelon Fronts," "Warsaw Air Defense Front," and "Intermediate General Purpose Reserves" are defined in Sadykiewicz, *Soviet-Warsaw Pact Western Theater of Military Operations*, op. cit. In the third method of Pact attack, one Czechoslovak and one Polish army may be positioned in the Second Operational Echelon of the first-line fronts. East European territorial forces are not included here. The operational role of the Polish 6th Airborne Division and the Polish 7th Amphibious Assault Division is discussed later in this section. The estimates made here are based on the peacetime disposition of the NSWP forces shown in *Oesterrichische Militaerische Zeitschrift*, January-February 1985.

three reasons for this. First, at the time, East European formations, particularly the Romanian and Bulgarian armies, had older combat equipment and fewer tanks, aircraft, and artillery than their Soviet allies. Furthermore, their soldiers had less previous combat experience and training.

Second, the main offensive axes ran through the major population centers of central and southeastern Europe. It may be assumed that Stalin was eager, for political reasons, to secure for the Red Army the proud role of liberators in these countries, which would be primarily symbolized by the liberation of capital cities. For instance, the very successful offensive led by the 2nd Polish Army was stopped unexpect-

Table 33

THE MAIN/SECONDARY ROLES OF THE EAST EUROPEAN ARMIES IN SOVIET FRONT-LEVEL OPERATIONS: 1944–1945

Army	Operations on the Main Offensive Axes[a]	Operations on Secondary Directions	Total Number of Front-Level Operations
1st Polish Army	—	3	3[b]
2nd Polish Army	—	2	2[c]
1st Polish Tank Corps	—	2	2[c]
1st Czechoslovak Corps	1[d]	3[e]	4
1st Bulgarian Army	—	4	4[f]
2nd Bulgarian Army	—	1	1[g]
4th Bulgarian Army	—	1	1[g]
1st Romanian Army	1[h]	2[i]	3
4th Romanian Army	—	3	3[j]
Total	2	21	23

SOURCES: *Soviet Military Encyclopedia*, Voenizdat, Moscow, 1976–1980; *Istoriya Vtoroi Mirovoi Voiny*, Vol. 10, Voenizdat, Moscow, 1974; *Voennyi Entsiklopedicheskii Slovar* (*Soviet Military Encyclopedic Dictionary*), Voenizdat, Moscow, 1983.

[a]In Russian: *Naynapravlenii glavnogo udara.*

[b]Belorussian (June-July 1944); Vistula-Oder (January-February 1945); Berlin (May 1945).

[c]Berlin; Prague (May 1945).

[d]Carpathian-Dukla (September-October 1944).

[e]West-Carpathian (January-February 1945); Moravska Ostrava (March-May 1945); Prague (May 1945).

[f]Belgrade (September-October 1944); Budapest (October 1944-Februray 1945); Vienna (May 1945); Balaton, strategic defense operation (March 1945).

[g]Belgrade.

[h]Debrecen (October 1944).

[i]Budapest; Prague.

[j]Debrecen; Budapest, Prague.

edly and for no apparent reason in the town of Melnik, 22 km from Prague, by Marshal Konev, the Commander in Chief of the First Ukrainian Front. Moreover, the Polish forward detachment of the Polish 1st Tank Corps reached the northern suburbs of Prague, 1 km from the city perimeter and was forbidden to move an inch further, despite the fact that the battle for Prague was in progress elsewhere.

Bucharest, Budapest, Vienna, Sofia, Prague, and Berlin—all but two East European capitals—as well as the majority of larger towns were liberated by the Red Army. The two exceptions were Belgrade, which was jointly liberated by the Red Army and Yugoslav forces, and Warsaw. In the case of Warsaw, two Soviet armies (the 47th from the North and the 61st from the South) first encircled the German forces in the area; the 1st Polish Army then entered the streets of Warsaw virtually unopposed by the Germans, as "the liberators of historic Polish capital city."

The Polish forces under Soviet command were accorded a further privilege: The 1st Polish Infantry Division was allowed to take part in the final battle for Berlin alongside the remaining 59 Soviet divisions. This favoring of the Polish forces can be explained by the fact that, at the time, Polish forces were the only East European forces directly commanded by Soviet officers at all levels, and thus the only ones the Kremlin regarded as politically reliable.

Furthermore, the Soviets deemed it prudent, from a propaganda standpoint, to steep a reliable prospective client army in military achievements, glory, and honor to counter the recognition accruing to the military achievements of the Polish forces in the West under the Allied Command (the Battle of Britain, the victorious storming of Monte Cassino, the successes of the Polish 1st Armored Division in France and Holland, etc.).[1]

[1]But the privileges accorded to the Polish forces under Soviet command were bought at a bitter price. Soviet combat orders had to be fulfilled even when the anticipated losses far outweighed the importance of the operation. As an example, more than 3,000 Polish troops were killed or wounded in March 1945 securing the German garrison in Kolobrzeg (Kolberg). This garrison, isolated and surrounded by Polish troops, was of no strategic importance whatsoever. The rational military solution would have been to blockade with limited forces and wait for capitulation (the standard practice of Western Allies). The Polish troops were sacrificed simply to secure an additional prestigious victory on Marshal Zhukov's front.

The heaviest losses, however, were sustained by the 2nd Polish Army, again for exclusively prestige/political reasons. According to Marshal Konev (I. S. Konev, *Zapiski komanduiushchego Frontom 1943-1945*, Voyenizdat, Moscow, 1981, p. 398), Stalin informed him and Zhukov on April 1, 1945, that he had decided to accelerate the capture of Berlin; Stalin openly admitted that it was not a military decision, but he feared that Berlin would be captured by the Western Allies in the near future. In deference to Stalin's wishes, both Marshals rushed through new plans of operations which were approved the next day by both the *Stavka* and Stalin and were put into immediate

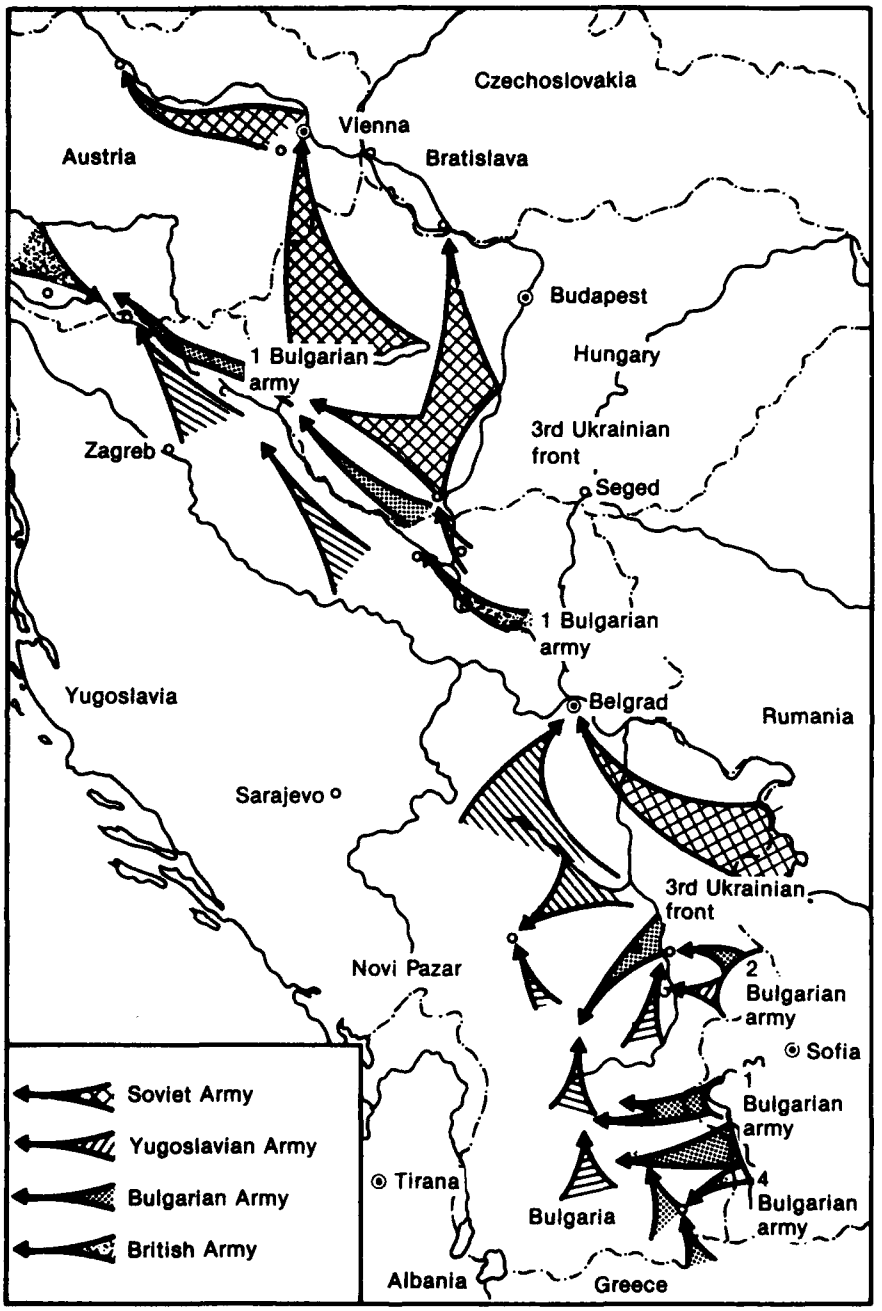
The role of flank-securing was the typical main operational task assigned to East European formations, as shown in Figs. 9 and 10. The Bulgarian 1st, 2nd, and 4th Armies in particular operated in this way. In fact, the Bulgarian 1st Army did nothing else throughout the nine months of its activities, even during the Balaton strategic defensive operation. Likewise, the Romanian 1st and 4th Armies, commanded directly by commanders of Soviet 40th and 53rd Armies, not by the front headquarters, were also deployed in this way.

The third reason for East European force deployment on secondary directions was that, paradoxically, in the final stages of the war, losses there were greater than on the main offensive axes. Armor was concentrated on breaking down German first lines, and with this rapidly achieved, troops entering the "operational space" converted the offensive into pursuit. In the secondary theaters, however, where there was no hard combat support and the terrain was frequently difficult, offensives progressed slowly, with the troops fighting each step of the way, for each separate village and even each house. The Soviet leaders probably believed that the Red Army had bled enough in its four years of war and now, in the final stages, the East European forces should give their share.

The combat losses (killed, wounded, taken prisoner, and missing) of the East European forces under Soviet command are shown in Table 34. Among the East European armies, the heaviest losses were sustained by the 1st Bulgarian Army. The East European forces under Soviet command, including Hungarian volunteer units, lost approximately 80,000 men through death and nearly 220,000 to injury and other combat-related causes. The heaviest losses were sustained by the infantry divisions, which constituted the majority of these forces. For example, the divisional losses in the 1st Polish Army are given below, expressed as percentages of average numerical strengths:

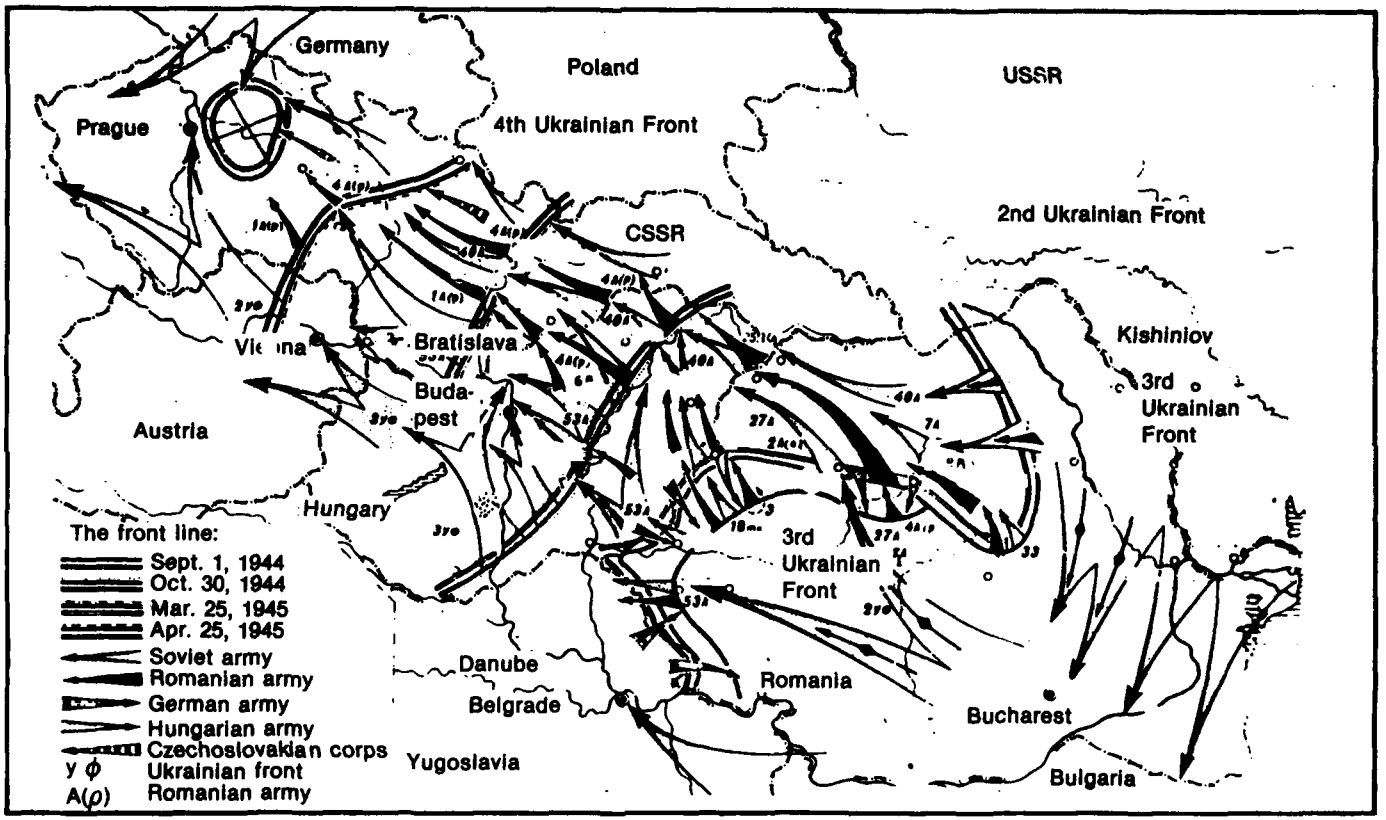
Division	Losses (percent)
1st Division	118
2nd Division	130
3rd Division	98
4th Division	95
6th Division	80

action. One consequence was the promotion of the 2nd Polish Army from the second to the first echelon of Konev's First Ukrainian Front (see Table 31 above). This deployment resulted in the loss of 20,000 soldiers. Again, the objective was primarily to further the Kremlin's far-reaching political aims concerning the postwar partition of Europe.



SOURCE: Antosyak, op. cit., p. 256.

Fig. 9—Campaign record of the Bulgarian Army, 1944–45



SOURCE: Adapted from Antosyak, op. cit., p. 201.

Fig. 10—Participation of the Romanian Army in World War II:
August 1944–May 1945

Table 34

COMBAT LOSSES OF SOVIET-CONTROLLED EAST EUROPEAN FORCES IN WORLD WAR II

Country	Absolute Number	*Percent of* Initial Overall Strength
Poland	80,000	43.2
Czechoslovakia	20,000	33.0
Bulgaria	38,000	9.0
Romania	170,000	34.0

The average numerical strength of an infantry division was, according to the TO&E, 11,500. Thus, for example, the 2nd Polish Infantry Division lost nearly 15,000 soldiers.

To sum up, the East European troops were used on secondary strategic directions and mainly on the flanks of Soviet fronts[2] for both political and military/operational requirements. Indeed, political criteria sometimes overshadowed military considerations. This conclusion is reinforced by the fact that the military/operational abilities of Polish forces, especially the 1st Army and 1st Tank Corps, were identical to those of their Soviet counterparts in terms of TO&E, interoperability, command abilities, etc., and still were used on secondary directions.

Today, in contrast, in the event of a WP invasion of Western Europe, East European forces would often be used on the main and most decisive axes.[3] Despite the disparities between Soviet and NSWP forces, the latter can be used on major offensive directions, especially when supported by Soviet artillery and rocket fire and given Soviet air support.[4]

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[2]The Soviet concept of using their allies mainly to secure the flanks of Soviet formations appeared first in 1938 during the battle over Khalkhin-Gol, where the combined Soviet/Mongolian forces fought the Japanese. Zhukov, the commander of the forces, decided to use all three Mongolian cavalry divisions to secure the flanks of the Red Army attack forces. Thus, the Mongolian 6th Cavalry Division secured the left flank, and the other two divisions secured the right flank. (See map inserted between pp. 320 and 321 of the *Soviet Military Encyclopedia*, Vol. 8.)

[3]In WP command-post exercises in the 1960s and 1970s, East European Northern Tier forces were frequently assumed to advance on the main attack axes. (Information based on personal experience through 1967 and later testimony of other former Warsaw Pact officers).

[4]NATO faces similar issues. After reorganization in the 1970s of the French armor and mechanized divisions (see *Zarubezhnoe Voyennoe Obozrenie*, No. 8, 1985), which lowered the number of French tanks and battalions and decreased their equipment, their combat capabilities were less than one-third those of U.S. armor and mechanized divisions.

In peacetime, all East German forces, most of the Czechoslovak forces, and a substantial part of the Polish forces are deployed within the depth of the first echelon fronts, or, in the case of Polish forces, in the area of second echelon fronts. East European troops will reach their wartime deployment areas before additional Soviet forces arrive from the USSR. Nonetheless, at the start of a WP attack with little mobilization, most of the East European troops will be in the second operational wave of the first echelon fronts. In accordance with Soviet operational principles, the second waves of the fronts will be brought in on the main offensive axes, to develop the success of the first wave. For purely military reasons, most East European forces will thus participate in the first strategic offensive operation directed by the *Western TVD* on the main axes of its operation. The same holds for those East European troops (mostly Polish) which, because of their location in peacetime, will enter the composition of second echelon fronts. These fronts will have the task of transforming the operational success of the first echelon fronts into strategic success and will be brought into battle on the most important strategic directions.

These military considerations argue against the view that "considerable elements of [NSWP] forces can be expected to be used on secondary tasks, in second echelons or on minor axes and for defense against NATO counter-attacks."[5] On the contrary, most of the NSWP forces, in the framework of the first strategic offensive operation conducted by the Western TVD, will probably participate

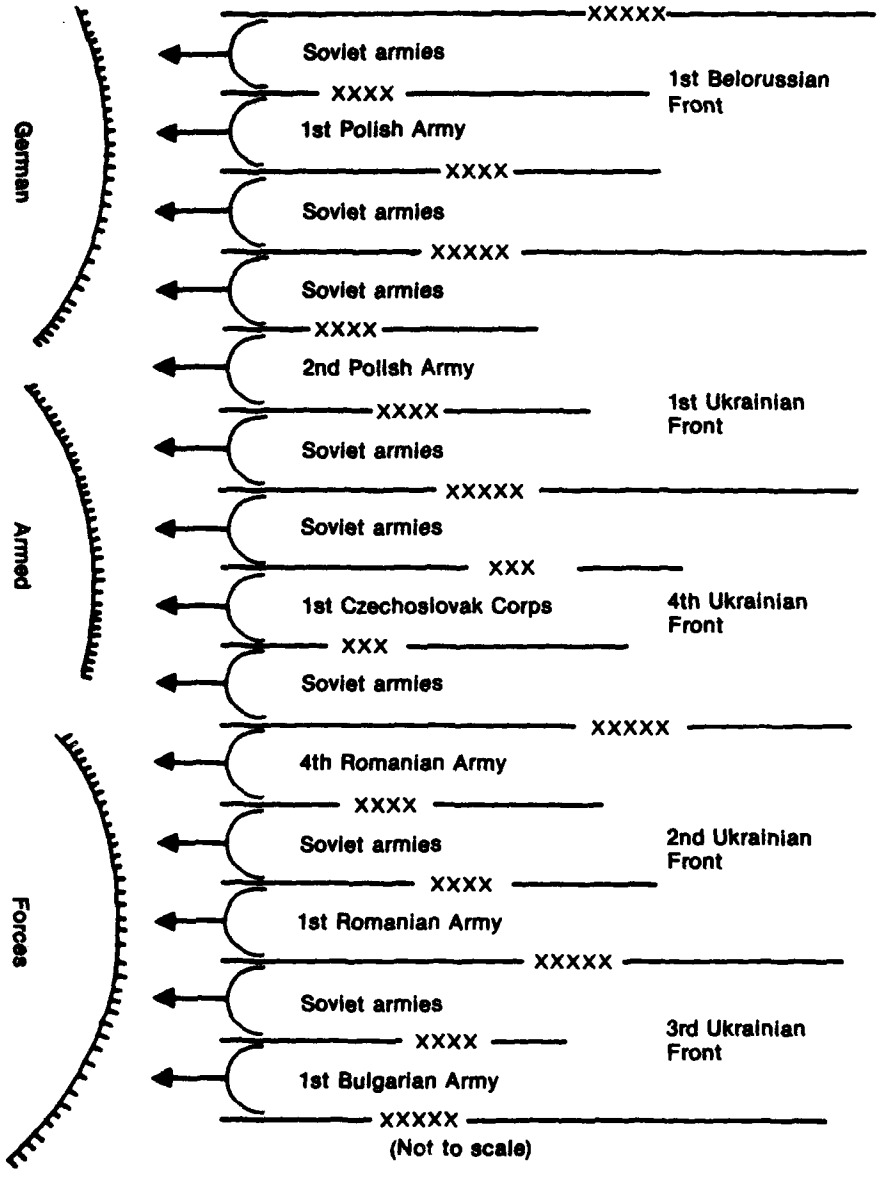
- Mainly in the first echelon fronts.
- Chiefly on the most decisive main (not secondary) directions.
- In the majority of combat actions.
- Very often in the most dangerous missions.

Nonetheless, as discussed previously, NSWP forces will be allocated relatively narrower offensive frontages or defensive sectors.

STRATEGIC/OPERATIONAL GROUPING

In World War II, as shown in Fig. 11, the Soviets used a "double sandwich concept," in which East European formations were segregated not only to preclude direct contacts among armies of one nation (e.g., the 1st and 2nd Polish Armies), but also to avoid contacts among different non-Soviet armies (e.g., Polish with Czechoslovak or Romanian

[5]*Strengthening Conventional Deterrence in Europe—Proposals for the 1980s*, Report of the European Security Study, Macmillan, London, 1983, p. 117.



SOURCE: Same as Table 14, plus P.A. Zhilin et al., (eds.), *Osvoboditel'naia missiia Sovetskikh vooruzhennykh sil v Evrope vo Vtoroi Mirovoi Voine: Dokumenty i materialy*, Voenizdat, Moscow, 1985.

Fig. 11—Soviet "double-sandwich concept" of strategic/operational grouping of the East European forces, winter-spring 1945

with Bulgarian). Moreover, the Romanian 1st and 4th Armies were put in a "triple sandwich," being subordinated to equally ranked Soviet commanders of the 53rd and 40th Armies, respectively, and were deployed *within* the operational groupings of these Soviet armies.

From a military point of view, this is nonsensical. It creates great difficulties for interoperability, uninterrupted logistics, supply, reinforcement, interaction, command and control, etc. It may be assumed that the Soviets used this "sandwich concept" exclusively to secure firm control of the East European formations and to ensure that these formations would never have the strength or coordination to challenge Soviet interests.

The probable contemporary Soviet "double sandwich concept" for the Northern Tier is shown in Fig. 12.[6] This variant of the Western TVD strategic/operational grouping is conceptually almost identical with that applied in World War II, as shown in Fig. 10. Now, as then, the concept is dominated by political rather than military/operational motives. Logistic stockpiling and supply of NSWP armies, for example, would be much less complicated if the various NSWP armies operated in close formation, e.g., if all three Polish armies or both Czechoslovak armies were adjacent. The same applies to their reinforcements, technical support, interoperability, evacuation system, etc. But political motives are dominant. A "sandwich concept" also serves the political aim of wartime counterpartner allocation for NSWP forces in the Northern Tier, as discussed in Sec. V.

Could a "sandwich concept" be maintained for an entire war in Europe? During military operations in 1944–1945, in which the East European forces participated for 8 to 12 months (see Table 31 above), Moscow was able to maintain this concept even when the depth of fighting by East European forces reached over 1,000 km and spread over the territories of nine European countries.

Under present conditions, Soviet military doctrine holds that hostilities in the central region will last for a maximum of three to four weeks. The depth of this region, on the NATO side, is only 150 to 400

[6]We emphasize that this figure is for illustrative purposes only. The grouping shown reflects the initial deployment of the Western TVD before the outbreak of war and deployment in subsequent stages of the Pact's first strategic offensive operation, when the second echelons of the first echelon fronts have been committed to action. Reserves and reconstituted second echelons of the fronts are not shown, nor are elements of "forward reach" (OMGs, etc.). The number of Soviet armies does not reflect their real quantity but is indicated only to emphasize the "sandwich concept." The number and names of the four fronts and their targeting against certain elements of NATO defense grouping are the author's suppositions. The place of the East European air forces, navies, and home air-defense forces is presented below. No distinction between all-arms (combined) and tank armies is shown. The numeration of the East European armies is explained in Appendix C.

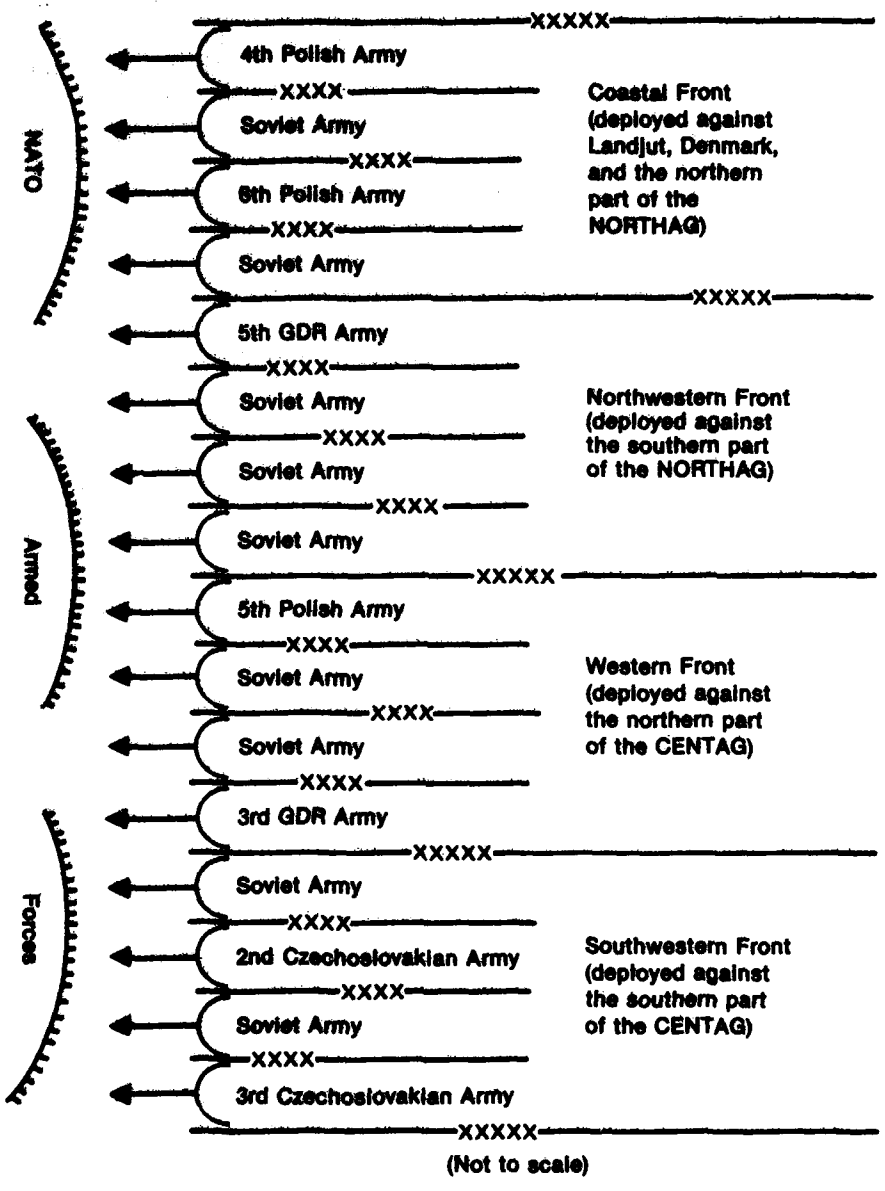


Fig. 12—Estimated Soviet "double-sandwich concept" of strategic/operational grouping of the East European forces in the Northern Tier (a possible wartime variant)

km,[7] so it may well be possible to sustain a "sandwich concept," assuming a successful Pact offensive. If Soviet armies find themselves in retreat, the "sandwich concept" will not help them, for the forces of the East European nations may cross over to the NATO side en masse and may, under certain conditions, even direct their weapons against the retreating Soviet armies.

On the other hand, the "sandwich concept" guarantees some important military/operational benefits:

- The East European armies will reach combat readiness faster and therefore may be moved from their assembly areas to the combat zone faster (in comparison with Soviet armies located on Soviet territory).
- The operational subordination of the separate East European armies to the various Soviet fronts makes the combat support of these fronts easier.
- The absence of national fronts makes the transit of Soviet forces from the Western part of the USSR to the combat zones throughout the territory of Poland and Czechoslovakia easier, because there will be no collisions between Soviet troops and the East European armies that would have to regroup to form national fronts.

Nevertheless, on balance, taking into account all the military/operational factors discussed above, the best military solution would be the establishment of national fronts or at least less "sandwiching" of NSWP forces with Soviet forces.

OPERATIONAL AUTONOMY

In the final stages of World War II, there were about 1.5 million East European troops (Polish, Czechoslovakian, Romanian, Bulgarian, and some small Hungarian units),[8] totaling more than 40 divisions, under Soviet command.

The Soviet command system that was used at that time for the East European forces, according to a Soviet source, is shown in Fig. 13. However, that system was in effect only from fall 1944 to spring 1945. In 1943 and the first half of 1944, East European units were under the operative command of Soviet divisions and corps. For example, the

[7]This was the standard time frame assumed by Polish and Soviet officers through the 1960s. Since then, the WP's theater conventional superiority has increased.

[8]The Yugoslav army worked in close cooperation with Soviet units but did not place any of its formations under the operational command of the Soviet army.

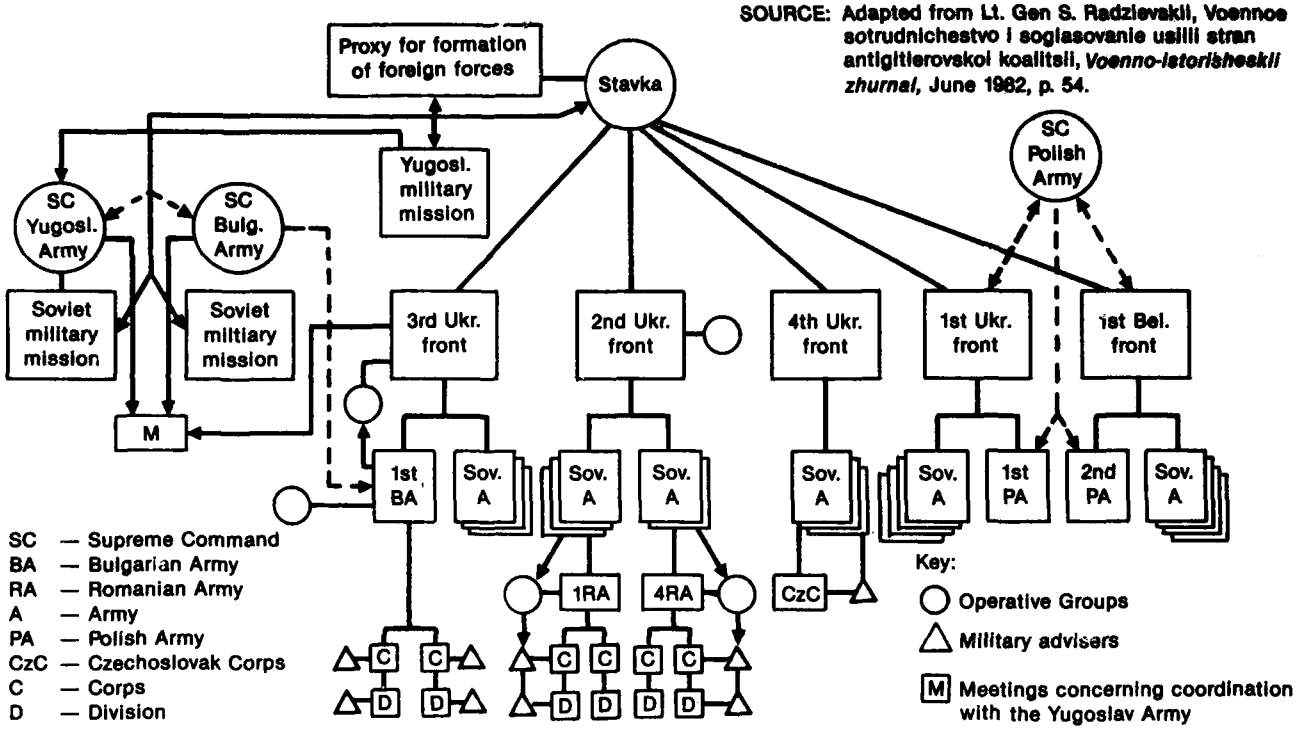


Fig. 13—The system of Soviet control over the East European forces in World War II

Czechoslovak 1st Independent Rifle Battalion was successively under the command of the 25th, 62nd, and 15th Soviet Rifle Divisions, and the 1st Czechoslovak Rifle Brigade was under the command of the 51st Soviet Rifle Corps and subsequently the 50th Rifle Corps. Polish troops were also temporarily controlled by Soviet units below the front level. The 1st Polish Rifle Division was under the 10th and then the 33rd Soviet army, and during the 1945 storming of Berlin, the rifle regiments of this division were under the command of various Soviet corps.[9]

There were also some rare instances in which Soviet units were operatively subordinated to East European commands. The Soviet 16th Independent Tank Brigade was assigned to the Polish 2nd Army, and the Soviet 359th Rifle Division was assigned to the 1st Czechoslovak Corps. It was quite usual for Soviet support troops, especially the artillery, to be temporarily subordinated to the East European commands for the duration of certain operations or battles.

The term "operational control" generally meant that the operative superior was entitled only to issue combat orders and directives and had no right to interfere in the internal affairs of the subordinated units. However, in practice, Soviet commanders actually dismissed some commanders of East European units who were only under their operational control. For example, in September 1944, General Kratochvil, the Commander of the 1st Czechoslovak Corps, was dismissed by order of the Commander of the First Ukrainian Front, Marshal Konev.[10] Some weeks later, Marshal Rokossovskii, the Commander of the First Belorussian Front, dismissed General Berling, the Commander of the 1st Polish Army, who was only operationally subordinated to him.

Analysis of the command system shown in Fig. 13 leads to the following conclusions:

1. The highest form of operational autonomy in the East European forces was the army (1st, 2nd, and 3rd Polish Armies; 1st Bulgarian Army; 1st and 4th Romanian Armies; and 1st Czechoslovak Army).[11]
2. These armies were under the direct operational command of Soviet fronts (Polish and Bulgarian forces) or under the control of Soviet army commanders (Romanian forces). By 1944, a precedent had been established whereby it was possible for

[9]The 1st Mechanized and 12th Tank Corps.

[10]See Antosyak et al., *Zarozhdenie narodnykh*, p. 63.

[11]Based on the 1st Czechoslovak Corps. In fact, up to the very end of the war, this army was never completely formed.

East European units to be operationally subordinated to Soviet commands on the same level, i.e., an East European army could be subordinated to a Soviet army.

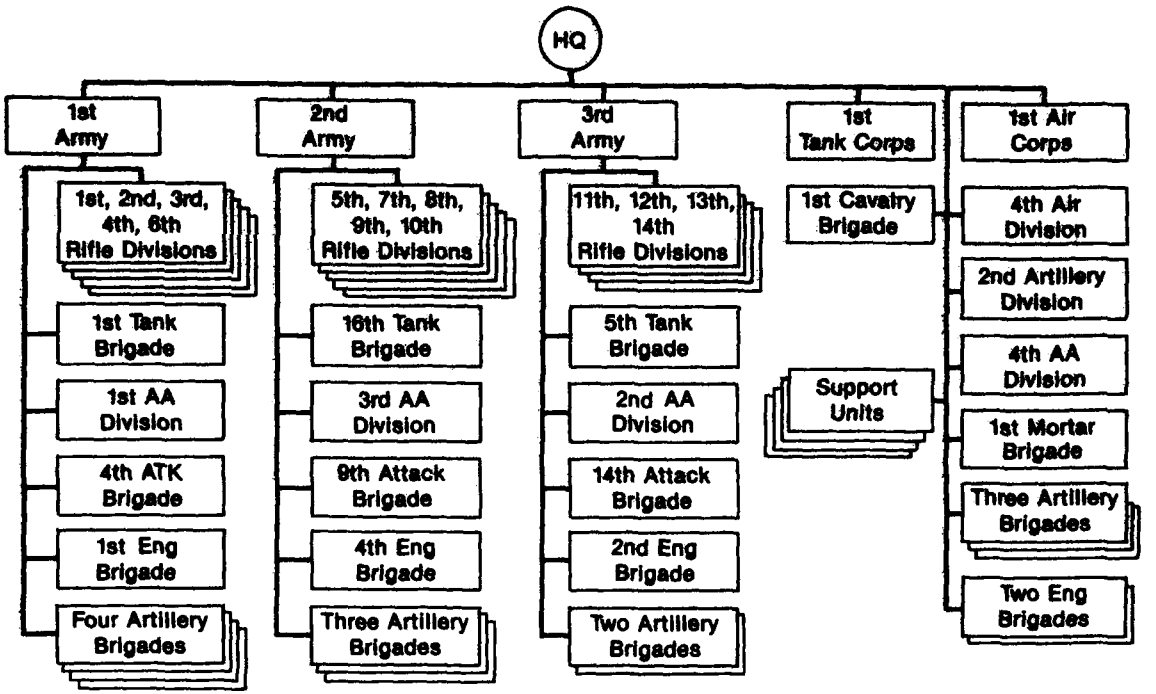
3. The Bulgarian and Romanian forces were supervised by the Soviets as follows: at the army level, by Soviet operative groups;[12] at the level of corps and divisions, by Soviet advisers. This also applied to the Czechoslovak Corps. The Polish forces were in fact led by Soviet officers at battalion level and above.[13]
4. Coordination of the combat activities of the East European forces with the Soviet units and matters relating to combat and logistic support were handled by East European Military Missions on the central level and by East European Operational Groups on the front level. On the tactical level, these matters were handled by the Soviet commands controlling the East European units.
5. The national East European commands had very limited power over their own forces that had been assigned to Soviet operative commands. As mentioned above, the Soviets sometimes dismissed even high-ranking East European commanders from their posts. However, in principle, all personnel nominations in the East European forces, including those under Soviet operational control, were restricted to the East European national commands. All the East European national forces that were not engaged in hostilities remained under the control of the national commands, but the overall military administration in the East European countries was controlled by the respective Soviet front commanders, and the rear of these countries was under the control of NKVD units.

In the second half of 1944, the *Stavka* decided to set up a Polish Front with the organizational structure shown in Fig. 14.[14] Since all command posts in the Polish forces were filled by Soviet officers, Stalin could rest assured that the formation of such a large Polish strategic-operational unit would not pose any threat. It is significant

[12]In this case, the Soviet operative groups consisted of Soviet staff officers, some of whom spoke the language of the East European army concerned.

[13]The percentages of Soviet commanders in the Polish forces were as follows: company, 40 percent; battalion, 80 percent; regiment and above, 95 percent. Only about one-third of the Soviet commanders spoke any Polish, and no more than 17.5 percent of the total 20,000 Soviet officers serving in the Polish forces in World War II were of (Soviet-born) Polish origin. (*Encyklopedia II Wojny Swiatowej*, 1975, p. 63.)

[14]*Mala Kronika Ludowego Wojska Polskiego*, pp. 122–123; *Encyklopedia II Wojny Swiatowej*, 1975, pp. 728–733.



SOURCES: K. Komornicki (ed.), *Regularne jednostki Ludowego Wojska Polskiego. Informator*, MON, Warsaw, 1977, pp. 31–43; *Encyclopedia II Wojny Swiatowej*, MON, Warsaw, 1975, pp. 41–42, 727–744; *Mala Encyklopedia Wojskowa*, in 3 Volumes, MON, Warsaw, 1967–1971, Volume 3, pp. 345–346.

Fig. 14—The concept of the Polish Front (1944)

that the Soviets never showed any intention of forming a "Romanian Front" or a "Bulgarian Front," although in the fall of 1944 the Romanian and Bulgarian forces far outnumbered the Polish forces.[15] The Romanian and Bulgarian forces actually had more reason to be grouped under their own national fronts, because they were very dissimilar to the Soviet army. National grouping would have greatly facilitated supply and personnel replacement directly from the respective countries, and it would have been far easier for the Romanian and Bulgarian armies to cooperate with each other in this context than it was to cooperate with the Soviets within the framework of Soviet fronts. Indeed, the Romanian and Soviet forces differed in tactics, structure, weapons, and command language.

It is therefore evident that the decision not to create Romanian or Bulgarian fronts was based on political, not military considerations. In the end, the Polish Front did not materialize either. In November 1944, the *Stavka* issued an order to stop its formation. The official reason was lack of Polish army officers, but in fact, the *Stavka* had decided to speed up the formation of the 2nd Polish Army and commit it to battle as soon as possible.

Contemporary Soviet military doctrine, as mentioned in Sec. II, envisions two possible strategic command systems in the event of a war in Europe: a three-level system (*Stavka*-TVD-fronts) and a four-level system (*Stavka*-TW-TVD-fronts). The three-level system would certainly be adopted in a war that is confined to Europe, but the four-level would be adopted in the event of a multifront, global war.

There can be no doubt that the highest levels of the strategic command system (*Stavka*, headquarters of theaters of war, and headquarters of theaters of military operations) will be under exclusive Soviet control. In principle, this will also apply to the headquarters of fronts, but some of them may be set up and headed by East European national commands.[16] From the military-strategic point of view, there are today, as in World War II, several advantages to concentrating all or part of an East European country's forces under its "own" national front, rather than using those forces in a system of armies (or divisions) incorporated into Soviet fronts (or armies):

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[15]The maximum numbers of East European forces under Soviet control were as follows: Romania, 500,000 troops; Bulgaria, 450,000 troops; Poland, 380,000 troops; Czechoslovakia, 90,000 troops; Hungary, 28,000 troops.

[16]Theoretically, only Poland, Czechoslovakia, Romania, and Bulgaria have sufficient forces to set up their own national fronts (each has potentially 3 field armies, 1 air army, and sufficient front-level support units).

1. National fronts facilitate troop leadership, interoperability, and coordination within the field armies; between field armies and the air army;[17] between field and air armies and the national air-defense system; and among all these components and national front-level support units.
2. National fronts facilitate coordination of incorporated national forces with Soviet and other East European forces.
3. National fronts simplify the operation of the logistic supply system between the rear of the country and the front, as well as inside the front. This is because individual East European countries have their own standard weapons, equipment, and spare parts, which in many cases differ from Soviet or other East European standard equipment.
4. National fronts facilitate the operation of the personnel replacement system and the evacuation system.
5. National fronts facilitate political propaganda work with the national troops.

Furthermore, it is in a country's national interests to have its own front. The national front fulfills the high-ranking officers' aspirations for leadership, raises the morale of the troops, and provides a fairly high degree of operational autonomy.

The Soviet leadership doubtless recognizes these advantages, but it also has to take other factors into consideration:

1. Just prior to the outbreak of war, it may be physically impossible to form national fronts, i.e., collisions could occur during the multidirectional movements of Soviet and East European forces. Such collisions would be most likely to occur in Poland, where dozens of Soviet divisions from USSR military districts would be marching along the East-West axis, and Polish divisions heading toward their frontal area of concentration would be marching along the South-North axis.
2. If East European forces are used within a system of national fronts, the Soviet concept of wartime "counterpartner" allocation for the East European forces would be very difficult to implement.
3. The existence of East European national fronts would make it difficult for the Soviets to exercise political control over the national forces. In certain cases—for instance, after an unsuccessful operation—this could lead to the neutralization of the

[17]In maritime areas, cooperation is facilitated between the field and air armies and the national navy.

forces or at least to a weakening of their offensive spirit and their will to fight alongside the Soviet forces.

For these reasons, in the event of war, it is likely that national fronts will not be formed or, if such fronts are created, that they will be based on a mixed composition of East European and Soviet forces. For example, the Polish Front might consist of:

- Polish forces:
  - two field armies (based on the Pomeranian and Warsaw military districts)
  - one air army
  - the Navy (if the front operates in the maritime area)
  - 6th Airborne Division and 7th Amphibious Assault Division
  - Polish front-level combat and logistic support units
- Soviet forces:
  - two field armies (for example, the 11th Army from the Kaliningrad area, Baltic military district, and the 28th Army from the Grodno area, Belorussian military district)
  - some Soviet front-level and High Command Reserve units

In this case, the third Polish Field Army (based, for instance, in the Silesian military district) would be included in one of the Soviet fronts stationed in the southern part of East Germany[18] (fighting against the 3rd German Corps in the NATO first echelon). The presence of one or two Soviet armies within the Polish Front would strengthen Soviet influence on the Polish command and troops.

The Czechoslovak Front might have a similar composition (although the creation of such a front appears even less likely than that of a Polish Front): two Czechoslovak field armies and two Soviet field armies, a Czechoslovak air army, and mixed Czechoslovak-Soviet front-level units.[19]

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[18]This would radically reduce the risk of collisions during troop redisposition on Polish territory.

[19]A detailed illustrative composition of such a mixed Czechoslovak Front is given by Friedrich Wiener, *Die Armeen der Warschauer-Pakt-Staaten*, Muenchen, Bernard & Graefe Verlag, 1979, p. 64.

In WP theater-level joint exercises in the 1960s and 1970s, such mixed Polish-Soviet and Czechoslovakian-Soviet fronts were established and commanded, respectively, by Polish and Czechoslovakian generals. (Personal experience and communication with other former Past officers now in the West.) It is difficult to imagine that in wartime such mixed Fronts would be commanded by non-Soviets, but in certain circumstances this cannot be excluded. In such a case, each Polish (or Czechoslivakian) commander of a mixed front would have a Soviet first deputy.

Likewise, the possibility of a Bulgarian Front cannot be excluded. This front would probably consist of three Bulgarian field armies combined with one, two, or even three Soviet field armies transported by sea from the USSR.

If these national fronts were formed, the remaining East European forces would consist of armies fighting within Soviet fronts. A possible partitioning of East European armies in wartime on this basis is shown in Table 35. Even in this situation, more than half of the East European armies would be included in Soviet, not national fronts.

In any event, the army will be the basic East European wartime unit.[20] In the event of mobilization or direct preparation for war, each military district will emerge as an army,[21] and this concept forms the

Table 35

POSSIBLE WARTIME ALLOCATION OF NSWP ARMIES

Country	National Fronts	Soviet Fronts
Poland	2	1
Czechoslovakia	2	—
Bulgaria	3	—
East Germany	—	2
Hungary	—	2
Romania	—	3
Total	7	8

[20]This conclusion is at variance with the view of Viktor Suvorov, who states that:

> the Soviet Union had forbidden its East European allies to establish armies in either peacetime or wartime. If a homogeneous mass becomes too large it may explode. The Soviet High Command avoids this danger within the Soviet Army itself, by constantly moving the various nationalities around, to produce a featureless grey mass of soldiery, unable to understand one another. In peacetime the armed forces of the East European countries only have divisions. In wartime, these divisions would immediately join Soviet armies which were under strength. . . . In peacetime these East European divisions see themselves as part of their own national armed forces. In wartime they would be distributed throughout the Soviet Armies.

(Viktor Suvorov, *Inside the Soviet Army*, London, Hamish Hamilton, 1982, p. 116. Suvorov is the pen name of a former Soviet General Staff intelligence officer now living in the West.)

A prohibition against establishing armies does not now exist, nor has one ever existed. The East European forces have had armies since the end of the 1940s; in peacetime, these armies are established as military districts.

[21]See Michael Sadykiewicz, *Wartime Missions of the Polish Internal Front*, The RAND Corporation, N-2401-1-OSD, July 1986, pp. 10–13.

basis of all war of the and mobilization plans in the East European countries.[22]

On the other hand, the Soviet military districts, or at least the majority of them, will set up fronts, not armies, which also exist in the Soviet forces in peacetime. The reasons for this are simple: First, Soviet military districts are much larger than East European military districts. The average Soviet military district has 11.3 divisions (the 16 military districts have a total of 181 divisions[23]), while an average East European military district has only 3.8 divisions (15 military districts with a total of 58 divisions). Therefore, the East European military districts can only set up armies, and this is their main mobilization task.

Second, the East European forces have their own complete army-level combat and logistic support units. These units comprise more than 50 percent of the troops within the national forces. If East European armies are not required in wartime, it would seem reasonable to deactivate the East European army-level logistic and combat units and form 15 to 25 additional divisions.

Third, more than 1,000 East European generals and officers are graduates of the Soviet General Staff Military Academy, where the main emphasis of the educational program is on the army level and above. All peacetime command and staff exercises of the East European military districts and above are performed exclusively on the army (and front) level. During joint WP maneuvers on the strategic-operational level, the East European commands play the role of army staffs. This army-level training has no purpose if Soviet military planning does not envisage the formation of East European armies in wartime.

In certain circumstances (discussed later), some East European divisions may be temporarily included in Soviet armies,[24] but these will be exceptions to the rule, according to the principles defining the use of the East European forces.

Another indicator of the planned operational autonomy of NSWP forces in wartime is the number of SSM SCUDs deployed in these forces. SCUDs, with a range of 300 km (and their successors, the SS-21, with a range of 500 km), are in the Soviet armed forces army-

[22]Personal experience and unanimous testimony of other former East European officers.

[23]*Soviet Military Power*, op. cit., 1988, mentions the figure of 211 Soviet divisions, including 30 within the Groups of Forces abroad.

[24]It is also possible that Soviet divisions may be temporarily included in East European armies. Soviet support units will be frequently assigned to East European armies or even East European divisions for the duration of the conflict.

and front-level weapons. Organizationally, they consist of brigades with 9 to 12 launchers each.

Table 36 shows how many SCUDs are deployed in the NSWP forces and how many armies/fronts they can support, taking into account the fact that at least one brigade of 9 to 12 launchers is needed per army and one additional brigade per front.[25]

To obtain a clear picture of East European wartime operational autonomy, two additional aspects must be taken into account: the dependence of this autonomy on the circumstances of war initiation, and the interdependence of the level of East European reliability and the circumstances of war initiation.

Interdependence Between NSWP Operational Autonomy and War-Initiation Circumstances

This aspect is summarized in Table 37, where:

- *Framework of national fronts only* means that the total operational forces of Poland and Czechoslovakia would enter war operations within the framework of their national fronts exclusively. East Germany, having only six divisions, is physically incapable of creating a formation of this type.
- *Fronts and separate armies* means that most of Poland's national forces, i.e., those of the Pomeranian and Warsaw

Table 36

SCUD DEPLOYMENT IN NSWP FORCES

Country	Number of SCUD/SS-21 Launchers	Number of Armies Supported	Number of Fronts Supported
East Germany	28	2	0
Czechoslovakia	31	3	0
Poland	32	3	1
Hungary	9	1	0
Bulgaria	48	3	1
Romania	15	3[a]	0

[a]Romania is an exception in that it can have three brigades of five launchers each.

[25]IISS, *The Military Balance, 1987-1988.*

[26]Romania is an exception in that it can have three brigades of 5 launchers each.

Table 37

DEPENDENCE OF EAST EUROPEAN OPERATIONAL AUTONOMY ON THE CIRCUMSTANCES OF WAR INITIATION

Initiation	Possible Level of East European Operational Autonomy				
	In the Framework of National Fronts Only	Fronts and Separate Armies	Separate Armies Only	Armies and Separate Divisions	Separate Divisions Only
Conventional attack					
Short-warning attack (minimum mobilization and reinforcement)	Will not appear	Will not appear	Less probable	Probable	More probable
After a period of tension and buildup of forces (partial mobilization)	Will not appear	Less probable	More probable	Probable	Will not appear
After full-scale mobilization	Probable	More probable	Less probable	Will not appear	Will not appear
Nuclear limited attack					
Short-warning attack	Will not appear	Will not appear	Less probable	Probable	More probable
After partial mobilization	Will not appear	Will not appear	Probable	More probable	Less probable
After full-scale mobilization	Less probable	Probable	More probable	Will not appear	Will not appear
Nuclear unlimited attack					
Short-warning attack	Will not appear	Will not appear	Will not appear	Will not appear	More probable
After partial mobilization	Will not appear	Will not appear	Probable	More probable	Less probable
After full-scale mobilization	Less probable	Probable	More probable	Will not appear	Will not appear

military districts, will belong to the Polish Front,[27] while the troops of the Silesian military district will become part of a Soviet front.[28] This applies equally to the Czechoslovak armed forces, which on the whole will constitute a national front (assuming such a front is created), while one of its armies will be incorporated into a Soviet front. In all cases, *the East European national fronts will be a mix of East European and Soviet armies.*

- *Separate armies only* means that all East European divisions will operate within the framework of their respective national armies, which will be incorporated in turn into various Soviet fronts. This applies to all three countries (East Germany, Czechoslovakia, Poland).
- *Armies and separate divisions* means that part of the forces will constitute national armies, while the rest, as independent divisions, will belong to Soviet armies.
- *Separate divisions only* means that with East European divisions incorporated into the nearest Soviet armies, the highest level of operational autonomy will be a division.

The discussion above applies to East European ground forces. The operational autonomy of other armed services may differ.

Air forces of Czechoslovakia and Poland will always appear as air armies (tactical air armies) whenever national fronts are created. If the forces of those countries fight not in a national front, but in their own land armies, their air forces will create their own air armies. Only if Polish and Czechoslovak forces operate with given divisions within Soviet armies will their air forces enter the composition of the territorially nearest Soviet air armies of the front, and in this case the East European air forces will also operate with divisions (perhaps, at times, corps) that are created ad hoc.

The East German Air Force will in every case operate with given divisions (perhaps corps) within the framework of the nearest Soviet air armies.

East European air-defense forces will always be incorporated in the WP air-defense front, commanded by a Soviet general.

Polish and East German navies will always be incorporated in the joint WP Baltic Fleet and, within its framework, will operate within the various nationally mixed operational naval task forces. Only if a

[27]The Polish Front will also include the Polish Air Army; and when this front is operating on the coastal flank, it will include most of the Polish Navy.

[28]In peacetime, the Silesian military district has three tank divisions and two motorized rifle divisions that may, in the event of war, form a tank army (*OMZ*, op. cit.).

Polish Front operates on the coastal flank will a significant part of the Polish Navy be made operationally subordinate to it. Similarly, some small units of the East German Navy may at times be subordinated to the Polish fleet, within the framework of a Polish Front.[29]

East European internal front forces (territorial, internal security, border, and other troops) will be subordinated in their entirety to their respective national commands. However, in the forward combat zones, some of them may remain operationally subordinated to Soviet fronts, armies, and, in some cases, even divisions.

East German and Czechoslovak border troops and some units of the internal security troops, being operationally subordinated to the local Soviet commands, can be used as:

- Forward detachments
- Flank guards
- Reconnaissance detachments
- Turning teams
- Diversionary groups, etc.[30]

Moreover, these troops—particularly the East German border and internal security troops (as well as police and other paramilitary armed units)—may be used, under Soviet command, as occupation forces in conquered West European territories.

If national East European fronts are not created, Czechoslovak and Polish formations and front-level units of logistic support will be incorporated into appropriate Soviet frontal rear services. Additionally, most East European civil aviation will be operationally subordinated to the Soviet Military Transport Aviation Command.

At the strategic level, East European rear services will be under national commands, which in turn will be subordinated to the Soviet Main Chief of Rear Services.

Let us now consider the possibility of the decentralized use of East European forces in divisional form, subordinated to the commanders of Soviet armies. Should the USSR launch a "short-warning attack," it will strive for the highest degree of secrecy in its preparation. Large-scale regrouping of forces, which could reveal WP intentions prematurely, will be kept to a minimum. Certain East German and Czechoslovak divisions, especially those stationed near the West German frontier (the first-strike operational area of the WP), will be

[29]Some WP command-staff exercises in which the author participated did simulate this: East German landing ships "transported" Polish infantry in a simulated operation on the Danish island of Sjaelland.

[30]Exactly as the Soviet KGB border troops and MVD troops were used in the invasion of Afghanistan in 1979 and in Manchuria in August 1945.

incorporated into those Soviet armies in whose fields of operations they operate in peacetime. The remaining East German and Czechoslovak divisions located in deeper positions (i.e., in the second-strike operational area of the first strategic echelon) may also be incorporated into various Soviet armies. Some East European front- and army-level (above divisional) units in this operational area may be operationally subordinated to the Soviet armies and even directly to the Soviet front command—for example, all types of support formations above divisional level: artillery and rocket troops, including those with nuclear delivery launchers; independent tank units; air-defense troops of ground forces; and engineering units.

Some Polish divisions and combat support units above the divisional level may also be incorporated into the various Soviet armies, especially the forces of the Silesian and Pomeranian military districts, including the 4th, 5th, 10th, and 20th Tank Divisions, as well as the 8th and 12th Motorized Rifle Divisions and Polish units above divisional levels stationed in these areas.[31]

In sum, in a "short-warning attack," the Pact can deploy the 15 to 20 East European Northern Tier divisions, plus adequate East European army- and front-level combat support units, by incorporation into Soviet first-line formations (see Table 38). These divisions potentially constitute a considerable force, strengthening the Soviet divisions to be used in the first wave of the first strategic offensive operation by almost 100 percent. Also included would be two other Polish divisions, the 6th Airborne and the 7th Amphibious Assault, which would partici-

Table 38

THE DEPLOYMENT OF NORTHERN TIER DIVISIONS IN A SHORT-WARNING ATTACK

Country	Tank Divisions	Motorized Rifle Divisions	Total	Percentage of National Total
East Germany	2	4	6	100
Czechoslovakia	3–5	2–3	5–8	50–80
Poland	3–4	1–2	4–6	30–45
Total	8–11	7–9	15–20	48–65

[31]This supposition is based on the peacetime disposition of these divisions (see *OMZ*, op. cit.).

pate in the first echelon. Thus, the total number of East European divisions might be as high as 22.

The second possibility of using selected East European divisions within the framework of Soviet rather than national subfront commands concerns the specialized airborne, seaborne, and diversionary formations and units, i.e., the Polish Airborne Division and Amphibious Assault Division, the Czechoslovak Airborne Brigade, and the East German Airborne Battalion and two Amphibious Assault regiments. In the absence of national fronts, these front-level formations will be operationally integrated with the appropriate Soviet fronts or with their national armies, if such armies are created.[32]

In a "short-warning attack," the majority of the East European divisions incorporated into Soviet armies and fronts will remain there at least during the first strategic offensive operation.

The possibility of incorporation of certain East European divisions into Soviet armies exists even when other circumstances of war initiation allow for regrouping, concentration, and deployment of East European forces within their national armies, or even national fronts. Operational demands could dictate this if Pact armies attack NATO defense groupings in depth, resulting in an intermixing of combat groupings that necessitates the transfer of given divisions from one army to another. Such instances were frequent on all fronts in World War II. Regrouping can occur in both Pact and NATO forces, and consequently, Czechoslovak or Polish forces, for example, may find themselves facing American rather than West German forces. In such cases, the East European division might be replaced by a Soviet division and subordinated to the nearest Soviet army.

Interdependence Between East European Reliability and War-Initiation Circumstances

At the start of a "short-warning attack," the East European armed forces would comprise only those troops that in peacetime are (politically) very well controlled. Under the shock of a war breaking out, and assuming a successful WP offensive in which the East European forces participate in a decentralized manner, the Kremlin should have no serious problems with East European reliability.

But if an attack is made after a period of tension and partial mobilization, there will be time for adverse public opinion to form both in the East European armies and in their national populations. Moreover,

[32]As occurred in World War II with Polish front-level formations, including the 1st Tank Corps, the 2nd Artillery Division, and the 1st Aviation Corps.

the reserve troops, and even reserve officers, called up within the framework of partial mobilization will introduce into the forces stronger antiwar and anti-Soviet feelings. These feelings could be especially acute and may, in turn, permeate the regular army cadres who have been isolated from their countrymen.

This possibility could be particularly problematic in the case of general mobilization in Pact countries following a period of East/West tension. Anti-Soviet and antiwar feelings in Pact countries would undoubtedly be stronger in this situation than in a "short-warning attack." Organized demonstrations could also take place to express the continuing opposition of the majority of the population to Communist rule. Thus, the mobilization of hundreds of thousands of reservists into the East European satellite armed forces would be especially dangerous from Moscow's point of view. Moreover, these feelings could affect not only the efficiency of Soviet transit through East European countries, but also the morale of the Soviet soldiers.

Thus, Moscow should prefer the surprise-attack method of war initiation, as it is less dangerous in terms of East European reliability. But because the Kremlin cannot begin a war in this way without East European forces, Polish forces included, the East European factor becomes one of the most important in Soviet military planning.

This discussion applies only to a conventional war. If the Kremlin decided to attack NATO forces with nuclear weapons, the degree of East European reliability would be of secondary importance.

DISTRIBUTION OF SPECIALIZED EAST EUROPEAN FORCES AMONG SOVIET FRONTS

In the final stages of World War II in Europe (January to May 1945), each of the six advancing Soviet fronts included an East European formation of some description (see Table 39). In some cases, the rationale was political. For example, the Polish 1st Independent Tank Brigade was incorporated into the Second Belorussian Front in the capture of Gdansk (Danzig). This was done not because Gdansk was the brigade's battle area, but because it served to demonstrate the Polish contribution to the liberation of a city about to be returned to Poland.

There were also military/operational motives for deploying East European forces among different Soviet fronts, including the ability of certain East European troops to fight in difficult and mountainous terrain. The 1st Czechoslovak Corps (composed mainly of former soldiers of pro-Nazi Slovakian formations that had been destroyed by the Soviets), for example, was put on the main offensive axis of the

Table 39

DISTRIBUTION OF EAST EUROPEAN FORCES AMONG SOVIET FRONTS: 1944–1945[a]

1st Belorussian	2nd Belorussian	1st Ukrainian	2nd Ukrainian	3rd Ukrainian	4th Ukrainian
1st Polish Army	1st Polish tank Bde	2nd Polish Army	1st Romanian Army	1st Bulgarian Army	1st Czech Corps
1st Polish Air Corps	1st Polish Navy Bn	1st Polish Tank Corps	4th Romanian Army	2nd Bulgarian Army	1st Czech Army[b]
4th Polish Mortars Bde	4th Polish Air Div	2nd Polish Art Div	4th Romanian Corps	4th Bulgarian Army	
4th Polish AA Div	14th Polish ATK Bde	1st Romanian Air	1st Bulgarian Air		
2nd Polish Engr Bde		1st Czech Bde	Corps	Div	
5th Polish Engr Bde		1st Czech Aviation	1st Romanian Ind	Bulgarian Danube	
1st Polish Women Bn		Regiment	Infantry Div	River Navy Dtchmt	
Polish Staff for		2nd Czech Airborne	Rom. Danube River	1st Hungarian	
Partizan Movement		Bde	Navy Detachment	Infantry Div[b]	
Polish Intelligence			5th Hungarian	6th Hungarian	
Diversional units			Infantry Div[b]		Infantry Div[b]
Polish Military			7th Hungarian	2nd Hungarian	
Security Bdes			Infantry Div[b]	Infantry Div[b]	
2nd Polish Army			1st Hungarian Bde		
1st Polish Tank Corps			Railroad Troops		
			3rd Hungarian Bde		
			Railroad Troops		
			Hungarian Volunteer		
			Regiment		
			1st Yugoslavian		
			Infantry Bde[c]		

SOURCES: Same as Table 14, and M. E. Monin, *Sodruzhestvo, rozhdennyoe v boiakh*, Voenizdat, Moscow, 1971.
[a]The subordination of some East European formations varied over time as they were moved from one Soviet front to another.
[b]Not operational until the end of the war.
[c]Administrative subordination only.

Carpathian-Dukla operation of the Fourth Ukrainian Front. The Czechoslovakian soldiers were very familiar with the topography of the area, having been born in the region. Romanians were likewise used in the Transylvanian-Carpathian area, thereby wedding Romanian mountain fighting abilities to the liberation of an area claimed by Romania. Additionally, the shortest lines of communication between the front (Romanian formations) and the rear (Romanian territory), used for supplying and reinforcing the army in the field, ran along that axis (see Fig. 11 above).

Under contemporary conditions, the specific capabilities of certain East European troops could result in the following distribution among Soviet formations: East European airborne units would take part in the first wave of attack. The Polish 6th Airborne Division, established 30 years ago, has systematically trained for landing operations on Danish territory and on Dutch and West German territories. If a Soviet airborne army is established, the Polish 6th Airborne Division will probably be included in it during the first strategic offensive operation. This division is a front-, or even a TVD-level command tool and will be used in a diversionary role as a front-level instrument. The Czechoslovak airborne brigade will probably be used in the Alps against the southern flank of NATO's Central Army Group (CENTAG) to seize and hold important strategic/operational objectives in its deep rear. East German airborne units (separate companies and even platoons) presumably will be used in a decentralized manner in the rear of non-German NATO corps to sow panic and chaos along the main communication lines.

A considerable number of East European airborne units may even be dropped in various NATO uniforms to create confusion in the rear, applying the very successful methods used by German diversionary groups who dressed in American and British uniforms in the Ardennes in December 1944.[33] Such a "masquerade" could be carried out in the first days or even hours after an initial invasion of Western Europe, exploiting the consequent unavoidable confusion in the NATO rear. The aim of such diversionary operations might be to channel a spontaneous mass flight of the West German civilian population in a convenient (for the Pact) direction. This elemental flight, involving millions of private cars, could completely block the roads and make it impossible for NATO forces to regroup and maneuver, or even to supply reinforcements from deeper positions to the combat areas. East European parachutists could amplify this chaos, which could be one of

[33]The Polish general staff utilized training films in the 1960s showing this diversionary mission for Polish special forces (from the author's personal experience).

the most difficult problems for the NATO command in the first days of war. East European airborne troops may be better suited to this purpose than their Soviet colleagues, since they are better acquainted with West European conditions. However, Soviet airborne divisions and heliborne brigades would be used for the more strictly military tasks, such as the capture of important strategic objectives in the NATO rear.

Finally, some of the East European airborne and heliborne troops may be used to disrupt the Central European Pipeline System (CEPS)—the basic source of fuel supply for NATO forces in case of war—and to capture the most important pumping stations and depots in order to supply the forward WP units.

The 7th Polish Amphibious Assault Division, the only such specialized formation in the WP forces, is also a front-level—if not TVD-level—element. In addition to participation in sea-landing operations on Danish territory (in conjunction with simultaneous air-landing operations in the same area), this division is also trained and equipped for capturing, on the march, the broad river estuaries of northern Germany (the Elbe from Hamburg to Cuxhaven, the Weser from Bremen to Bremerhaven, etc.). Thus, this division will constitute an element of the coastal front, irrespective of whether it is a Polish or a Soviet front.

Czechoslovak mountain troops, which are stationed in mountain regions (Sudetes, Tatras, Beskids) in peacetime, are trained for high-mountain-terrain operations. In the event of war, they could be used primarily in the Western Sudetes and in the Alps, in cooperation with similar mountain-trained Soviet divisions from the Carpathian military district. These Czechoslovak units may be operationally subordinated to Soviet commands, and on occasion even to Soviet divisions attacking NATO's southern flank in the Alps.

In summary, it is unlikely that all East European specialized forces will be deployed in wartime in accordance with their predetermined military roles. The "sandwich" principle might not even be applied to them. In any event, these units would probably operate within the framework of Soviet, and not national, front- and army-level commands.

RECAPITULATION

The operational utility of the main forces of the Northern Tier East European armies in a conventional war started after a period of tensions is shown in Fig. 15. In this operation, the Polish forces would presumably operate in two large pieces:

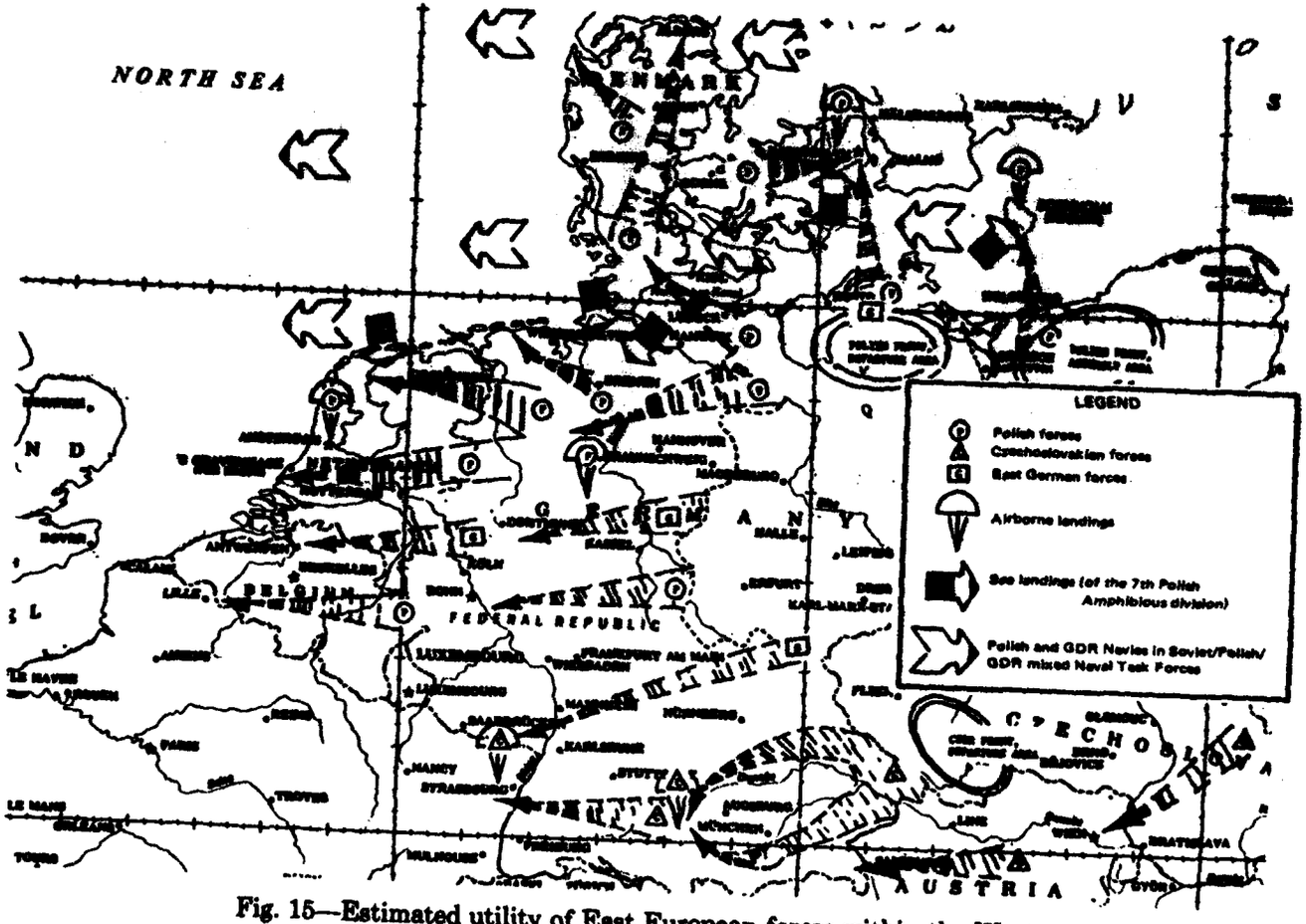

Fig. 15—Estimated utility of East European forces within the Western TVD in the framework of the first offensive strategic operation of the Warsaw Pact (a possible variant)

1. Two all-arms armies, one air army, one air-defense corps, and the entire Polish Navy, in the framework of a mixed Polish/Soviet front, nominally under Polish command.
2. One tank army, based on the forces of the Silesian military district, in the framework of a Soviet front, directed against the northern part of the CENTAG or the southern part of the NORTHAG.

The "Polish Front," at least in the first phase, will be engaged against the following illustrative NATO forces: the 1st German Corps, the joint German/Danish troops of the Allied Land Forces Schleswig-Holstein and Jutland, the joint forces of the Allied Forces Baltic Approaches, and the Danish Army on its national territory. Depending on the general strategic situation, the main effort of this front may be directed against Denmark or the northern part of the Netherlands. The Polish tank army will be engaged against the 3rd German Corps, and then, in operational depth, in the direction of the Rhineland.

The East German forces will take part in the Pact's first strategic offensive operation in the first operational echelon of the first strategic echelon in two separate all-arms armies, each reinforced by its own aviation, artillery, and other combat support units. The 5th East German Army will be directed against the British Army of the Rhine in conjunction with two Soviet armies of the same Soviet front. The subsequent task for the 5th East German Army may be to combat the 1st Netherlands Corps and participate in an invasion of the Netherlands. The 3rd East German Army may be used against the 5th U.S. Corps, in conjunction with Soviet armies and then, in operational depth, against the area Pfalz-Saarland.

Czechoslovak forces may also establish a mixed Czechoslovak/Soviet front, under nominal Czechoslovak command. This front would combine most of the Czechoslovak armies and divisions in the western part of that country and could be used against the 2nd German Corps in Bavaria, then in the western direction, covering the entire southern part of Germany. An independent Czechoslovak army or corps, based on Czechoslovak forces deployed in Slovakia may act against Austria in the Danube valley, in the direction of Vienna-Linz-Salzburg.

This variant demonstrates the applicability of the following Soviet principles with regard to NSWP forces:

- Allocating NSWP forces against traditional national enemies or other specific national opponents.
- "Sandwiching" NSWP forces with Soviet forces.

- Respecting peacetime disposition of NSWP forces to avoid complex relocation.
- Preferring to utilize NSWP forces in the first echelons and on major axes that have a high degree of combat intensity.

VII. CONCLUSIONS

The great numerical strength of the NSWP forces is an important factor in Soviet military/strategic planning. The Northern Tier East European forces alone are quantitatively superior, in military terms, to the forces of all the NATO "minor" allies and are even stronger than all the NATO Central Europe forces, excluding the U.S. and French. Being deployed in the Pact's forward area, the NSWP forces assure the preparation of theater infrastructure, constitute a buffer zone for the European territory of the USSR, and guard the important East-West and North-South strategic transit areas.

At the same time, the NSWP forces, especially those of the Northern Tier, are an indispensable element for launching a conventional theater surprise attack against Western Europe. Without the participation of these forces, such an attack could not be mounted with a reasonable expectation of early success.

Thirty first-class Soviet divisions with a very high degree of combat readiness are stationed in the territories of the NSWP countries. These divisions are supported by the newest Soviet aircraft, helicopters, and warships. The Soviets have used the territories of East Germany and Czechoslovakia for the deployment of short- and medium-range nuclear-capable missiles and have used NSWP military airports for nuclear-capable Soviet aircraft.

On the other hand, Soviet war planning is constrained in consigning roles and missions to the NSWP forces. The quality of the NSWP weaponry is not compatible with their numerical strength, when compared with the weapons of the Soviet forces in the forward area. This is especially true with regard to the three Southern Tier NSWP countries, which are armed not only below Soviet standards, but even below the level of a number of Third World countries. This leads to operational limitations in the combat utility of NSWP Forces, which would be expressed in narrower offensive frontages, slower advance rates, etc. However, these limitations need not be obstacles to engaging the NSWP forces, especially those of the Northern Tier, in the most important Pact operations, even on the decisive strategic directions.

The general principles relating to East European forces in Soviet military policies are the same today as they were in World War II:

- Maximum exploitation of the human, economic, and military potential of the East European countries to serve Soviet interests.

- Utilization of East European forces as major tools for the Communization of their respective societies and for keeping the Communist regimes of Eastern Europe in power.
- Guaranteeing maximum Soviet control over the East European armies.

The following provisions serve this third objective:

- Making NSWP forces dependent on supplies of arms produced in the USSR; maintaining a time lag in the Soviets' favor in the modernization of East European forces; ensuring that in case of war, the most threatening weapons (currently, nuclear weapons and others of mass destruction and conventional strategic weapons) remain at the disposal of only the Soviet forces.
- Limiting in most cases the highest level of wartime autonomy of the East European forces de facto to the army level.
- Preserving local proportions favorable to Moscow and thus, in the event of hostilities, dispersing the East European forces among Soviet fronts; ensuring the actual isolation of these forces by utilizing the "sandwich principle."

The Soviet concept of military/operational use of East European forces, however, has changed radically since World War II. Instead of using East European forces mainly on secondary directions, as they did in World War II, in a major Pact/NATO conflict, the Soviets would use East European forces on the main attack axes, primarily in the first echelons.

This fundamental change is in no way at odds with the Soviet general principles of war. It stems from three factors: First, the relative increase in quality and quantity of the East European forces is virtually beyond comparison with the World War II period. Whereas the East European forces constituted a small percentage in the World War II alliance with the USSR, they currently play a serious role in the general military balance, especially in the decisive central region. Approximately every third WP tank and every third WP airplane or warship in this region belongs to the East European forces.

Second, the political reliability of these forces has grown, in Moscow's view. The Polish Army suppressed Solidarity. The Czechoslovak armed forces, weakened in 1967–68, have been purged and are, in comparison to that period, politically reliable. And East German forces have seemed reliable. More generally, during the 40 years of Soviet domination over East European armies, Moscow has created new generations of pro-Moscow-oriented officers. These professional soldiers, along with other career soldiers (warrant officers and

NCOs), are an integral part of the ruling "new class" in the East European countries, no less bonded to the Communist regimes than the party apparatus and the security police. These professional soldiers constitute approximately 50 percent of the peacetime strength of their respective armed forces.

Third, Soviet military planning assumes that in the event of war in Europe, combined Soviet/NSWP forces will, throughout the first strategic offensive operation, advance rapidly through NATO territory, and that this military success will assure the loyalty of the USSR's East European allies. This assumption is derived from the numerical superiority in conventional forces of the WP over NATO.

Appendix A

POLISH MILITARY DOCTRINE[1]

The aim of military activity in peacetime is to prepare and maintain the established degree of war readiness; in wartime, it is to ensure victory as a result of armed struggle. The latter aim can be further broken down into more detailed aims, the most important of which are (1) those achieved with the operational forces that are designated for allied operations during strategic operations in the theater of military operations (TVD), and (2) those of the armed forces designated to defend the country's territory.

Operational activities in the course of strategic operations in the TVD (on land, on sea, and in the air) usually include smashing enemy forces (barring enemy entry onto home territory), immobilizing the enemy's economy, disorganizing the enemy state (or coalitional) government system and armed forces command system, and taking territorial control of one or more enemy coalition states, which could lead to enemy acceptance of dictated conditions and the achievement of final victory.

Strategic operation aims are achieved with the simultaneous or consecutive execution of many tasks by combinations of armed forces. Since contemporary strategic operations are characterized by their great operational scope—in terms of the space in which they occur and the amounts of men and means used—they generally assume a coalitional character. All types of forces—strategic rocket forces and land, air, and sea forces, as well as anti-air-attack defense forces of the states in the coalition—participate.

The numerical and qualitative level of forces earmarked for a strategic operation should be such that all planned tasks are realized, with either conventional or nuclear means.

Contemporary strategic operations have an all-embracing character, as have the environments in which they are conducted and the forces that conduct them. The most important operational strategic forms are first and successive nuclear strikes, air operations and air defense, land force operations, and airborne and sea operations.

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[1]This appendix is the translation of an article by Col. Prof. Julian Kaczmarek published in *Zolnierz Wolnosci*, February 20, 1965. (The article's closing remarks, of a propagandistic nature, have been excluded.)

Activities conducted during the military defense of the country's territory (by Territorial Defense – Poland (OTK) forces, militarized units, and civilian defense formations, all cooperating with administrative and national economic state organs) are intended not only to guarantee the undisrupted rhythm of the country's life, which constitutes the supportive rear of the external front, but also to create armed forces matching the needs dictated by conditions. These aims are attained through armed struggle with enemy forces and means as well as through numerous activities that guarantee its effective conduct. It should be emphasized that the tasks in the sphere of armed struggle with enemy forces that have penetrated the country or its airspace (through the country's air, territorial, and coastal defense) are no less important than those executed by operational forces.

In view of today's threats, the air defense of the country is of particular importance. Its proper application and effective operation predetermine, to a great degree, the efficient functioning of the whole country during war as well as the effectiveness of the operational force cover at any given stage of operations. Despite the neutralization of part of the enemy's nuclear attack capability in his base camp regions (which would be done within the framework of strategic operations in the TVD), a large proportion of that capability will survive. Therefore, the delivery vehicles must be destroyed in flight, before they reach their targets. This requires an effective detection and alert system, as well as air and rocket defense based on modern, operative, automated command systems.

The area and object-area defense organized by the National Air Defense – Poland (OPK) forces ensures direct cover for the most important objects and also eliminates uncontrolled areas, thereby enabling the airspace over the whole territory of Peoples' Poland to be effectively defended.

Tasks of equal importance are assigned to territorial and coastal defense. The efficient functioning of the entire state organism depends on their execution.

Territorial defense encompasses the fighting of enemy forces that have successfully penetrated the country's territory and are able to form points of armed struggle therein. These can be air or coastal landings, or specially designated forces or units (subunits) intended to penetrate the deep rear, or forces recruited from crews of destroyed aircraft, or armed groups of *the enemy within*.[2]

Two groups of territorial defense tasks are especially important: antiairborne defense tasks, the chief responsibility for which is

[2]Author's emphasis.

shouldered by the national defense department, and antidiversionary defense tasks, which are the responsibility of the internal affairs department.

The special military significance ascribed to coastal defense stems from the character of the threat and the significance of the coast as an area of military operations.

In contemporary conditions, the coast—a belt of land directly contiguous to the sea and constituting an open frontier—is particularly exposed to a variety of enemy operations. It is easily accessible from the sea, as well as through the simultaneous use of air, sea, and land forces.

The constant threat to the coast stems, moreover, from the increased role of seaports in contemporary war, as well as from the presence of national economic objects of great defensive significance in the belt directly contiguous to the sea. Here, the interests of the operational forces are harnessed to the military territorial defense of the country, necessitating the comprehensive treatment of coastal defense both at the time of planning and at the time of execution.

The existing threat and the significance of the coast ensure that operations there will encompass all the initiatives in air, sea, and land defense.

The interdependence of tasks executed within the framework of a coalition and inside the country requires strict coordination of activity of the various elements of the defense system. This is ensured by the contemporary structure of command in defense operations. In this structure, it is possible to distinguish hierarchically ordered elements (including those of the political and administrative organs of state power, as well as social and cooperative organizations) which guarantee an agreed, harmonious, and efficient functioning of the entire defense system, both in peacetime and in war.

For doctrinal viewpoints to be realistic, the degree of threat must first be accounted for, and the contemporary character of war and the potential of the state must be recognized. A defensive doctrine worked out on that basis would recognize the need for contracting into profitable alliances as well as the necessity of building a defense system appropriate to the country's defense requirements.

Appendix B

A METHODOLOGICAL NOTE ON COMPARING SOVIET/EAST EUROPEAN COMBAT CAPABILITIES

MODES OF ANALYSIS

In a comparative study, the appropriate choice of methodology, introduction of parallels, and establishment of parameters or criteria for comparison are fundamentally important. In turn, it is important to establish the coefficients and values of those criteria selected for comparison. Two methods are used in Eastern and Western comparative analyses: totalistic and selective.

The Soviet Method of Assessment of Combat Capabilities

The Soviet method of assessing combat capabilities is defined as follows in the *Soviet Military Encyclopedic Dictionary*:[1]

> Combat capabilities, quantitative and qualitative indicators, characterizing the potential of subunits, units (warships), formations and major field forces within the scope of executing defined tasks in established time in concrete situations. They depend on the number of personnel, level of both combat-training and moral-political state, quantity and quality as well as the technical nature of arms and combat equipment, officer ability to command, organizational structure of forces, their provision of material-technical means, as well as character of the enemy, terrain conditions, meteorological situation and other factors.
>
> The combat capabilities of various services find expression in various factors.
>
> The combat capabilities of ground forces are characterized by the grouping/strength of opposing forces they are capable of routing (destroying) in attack (or repelling in defense); depth of combat tasks of forces; rate of their advance; depth of influence of enemy objects; radius of destruction; time necessary for preparation to strike, etc. Firepower possibilities, maneuverability of formations, units and subunits, their ability to destroy tanks, aircraft, etc., may be defined separately. Combat capabilities may be analyzed according to types and means of destruction (rockets, air force, tanks, artillery, etc.), and also on the basis of the ability of units, formations and major

[1] 2nd Ed., *Voenizdat*, Moscow, 1986.

> field forces to create density of forces and means on 1 kilometer of front. (p. 89)

The fire capabilities cited above are characterized in this same source as follows:

> The scope of fire tasks, which can be realized by a defined composition of fire sources of a subunit, unit, warship, formations or combat groups (force) in a defined time, or with the aid of a defined amount of ammunition.
>
> Fire capabilities can be expressed by the number of destroyed targets, the extent of territory under fire, width of barrage fire, defensive fire, etc. (p. 507)

This method clearly cannot be applied to the problem of comparing Soviet and East European forces. In the first place, many of the factors mentioned, e.g., density of forces and means per kilometer of front, are not quantifiable. If a Soviet division and an NSWP division have the same number of tanks (say, 322), then a Soviet division that has T-80 tanks and a non-Soviet one that has T-55 tanks (which are three generations older than the T-80) will be numerically the same, but their combat capabilities will decidedly differ.

Second, in the Soviet definitions, there is no explanation of the relationships among the various elements, e.g., the relationship between maneuverability and fire potential.

Third, some of the factors mentioned in the definition can be taken into account solely under strictly defined conditions (e.g., "the character of enemy counteractivities, field conditions, and meteorological situations"); thus, they have a variable character.

Fourth, the Soviet definitions are not exhaustive, since they repeatedly refer to "other factors," which are not defined. They say nothing about the value coefficients among the various combat capability elements mentioned, e.g., the relationship between firepower and mobility and how it can be expressed numerically.

Thus, the Soviet method of evaluating combat capabilities may be useful in staff planning and calculations before a battle, but it cannot be applied here. Nonetheless, some of its theses may be used.

The ADE (Armored Division Equivalent) Method

The selective study method, which has already been applied and described, takes only one comparative element, equipment.[2] Although

[2]See William P. Mako, *U.S. Ground Forces and the Defense of Central Europe*, The Brookings Institution, Washington, D.C., 1983, App. A, which quotes and discusses material published by the U.S. Army Concepts Analysis Agency, *Weapon Effectiveness*

this method has thus far been used only to compare combat capabilities of the various NATO, Soviet, and NSWP divisions with those of American armored divisions, it also encompasses comparative elements of Soviet and NSWP divisions.[3] It is imperfect for our purposes, but we shall use it after making some modifications.

William Mako has calculated the relative values of equipment in various U.S., Soviet, and NSWP divisions. The analytical method applied to the data in Mako's tables to establish the value of equipment of various NATO and WP ground force divisions in relation to that of the U.S. armored divisions is described below. Using an ADE coefficient of 1.00, all key weapons were analyzed with the following model:

Number of weapons × weapon effectiveness index × category weight = weighted value.

The weapon-effectiveness index (WEI) is based on standard measures developed by the U.S. Army. Each weapon is rated against the standard for its category, e.g., the Soviet T-62 tank is measured against the U.S. M60A1 tank and is shown to have a WEI of 1.03.

Each weapon category is assigned an average weight, e.g., 60 for tank weapons, 1.2 for small arms, and 6.0 for type M113A1 and M114A1 armored personnel carriers (APCs).

Table B.1 shows a numerical comparison based on Mako's analysis of the combat potential of the East European and Soviet divisions, relative to the U.S. armored division standard of 1.00. Table B.2 shows a comparison relative to the Soviet armored division.

With this simple technique, we would appear to have established the combat values of East European divisions in relation to Soviet ones. In reality, however, the data in Table B.2 are not an accurate gauge. Mako's data are more than 10 years old, and new arms with different WEIs have superseded those shown. For example, the U.S. M1 Abrams tank, which has recently been supplied to the U.S. divisions in Europe, has been characterized as follows:

> It is the finest tank in the world today, and *more than doubles* the performance capability of the M60.[4] (Emphasis added.)

Indices/Weighted Unit Values, Vol. I, Washington, D.C., 1974. Also see C. White, *Conventional Force Assessment Methods—An Introductory Appraisal*, SHAPE Technical Centre, Professional Paper STC PP-195, The Hague, May 1983.

[3]The Soviets may also have an unpublished method something like the American "ADE."

[4]Lt. Gen. Donald R. Keith, Deputy Chief of Staff for Research, Development and Acquisitions, *U.S. Senate Hearings*, Department of Defense Appropriations, Fiscal Year 1982, Part 4, p. 165. This view is shared by an authoritative Soviet source, which states,

Table B.1

COMPARISON OF U.S., SOVIET, AND EAST EUROPEAN ARMORED DIVISIONS

Unit	Index
U.S. armored division	1.00
U.S. mechanized infantry division	0.94
Soviet armored division	0.66
Soviet mechanized infantry division	0.68
East European armored division	0.59
East European mechanized infantry division	0.65

Table B.2

COMPARISON OF SOVIET AND EAST EUROPEAN ARMORED DIVISIONS

Unit	Index
Soviet armored division	1.00
Soviet mechanized infantry division	1.03
East European armored division	0.89
East European mechanized infantry division	0.98

Mako calculates that the WEI of the M60 tank is 1.00 and that of the Soviet T-55 tank is 0.89. The average value for the Soviet T-54, T-55, T-62, T-64, and T-72 tanks is from 1.00 to 1.02. Consequently, if the M1 Abrams tank has "more than double" the WEI of the M60, the WEI proportions should be as follows:

U.S. M1 Abrams tank 1.00
Soviet T-55 tank. 0.45
Average value of Soviet T-54 to T-72 tanks. . . 0.51

This radically alters the ADE in favor of the American division:

Unit	WEI Before the M1 Abrams	WEI After the M1 Abrams[4]
U.S. armored division	1.00	1.00
Soviet armored division	0.66	0.43
East European armored division	0.59	0.39

[4] "In terms of combat quality the M1 Abrams tank is 1.5 to 2 times better than the other existing American tanks." (A. V. Gromov et al., *Vooruzhenie i Tekhnika.Spravochnik*, Voenizdat, Moscow, 1984, p. 143.) Some Western analysts would view these ratios as exaggerated.

These proportions increase still more in favor of the United States when we consider that U.S. divisions now have 360 tanks[6] rather than 324, and 678 APCs[7] rather than 555, not to mention other qualitative and quantitative changes.[8] We do not have precise data on the changes that have taken place in the past 10 years in Soviet divisions, although they are surely considerable.[9] According to James P. Wade, U.S. Acting Under Secretary of Defense:

> They (the Soviets) often field one and a half to two generations of equipment while we field one generation.[10]

Because the available data are outdated, we have attempted to modify our analytical method to make it less rigidly tied to data on the quality and quantity of comparative arms, i.e., to make it applicable to specific situations and over time. We have retained all four components of the ADE method, modifying them in accordance with the aim of comparing Soviet and East European division combat potential.

The first component, number of weapons, is not changed. The second, WEI, is altered drastically. The point of reference is now Soviet weapons, and instead of using specific types of weapons, the calculation base unit in each category is the weapon-generations coefficient (WGC).

Weapon-Generations Coefficient. We must first clearly define what is meant by "weapon generations." This refers to successive new models that have been introduced on a mass scale and whose tactical-technical parameters differ fundamentally from those of the previous model in the same category.

As experience shows, not every new model of weapon is better than its predecessor. For example, two new Soviet automatic rifles, the Tokarev (SVT-40) and the Simonov (SVS) were introduced in 1939

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[5]This does not take into account the Soviet counterpart of the M1 Abrams, the T-80, which has yet to be introduced in the USSR on a mass scale; so far, 1,500 such tanks have been deployed opposite NATO. (*Soviet Military Power 1987*, U.S. Government Printing Office, Washington, D.C., 1987, p. 66.)

[6]According to the latest Soviet assessment; see N. K. Glazunov and N. S. Nikitin, *Operatsiia i boi*, Voenizdat, Moscow, 1983, p. 71.

[7]Ibid. We use the Soviet numbers for comparison; U.S. numbers are 348 tanks and 570 APCs per armored division (*The Modern U.S. War Machine*, Crown Publishers, New York, 1987).

[8]Such as the introduction of M2 Bradley infantry fighting vehicles, new types of combat helicopters, antitank, and antiaircraft weapons, etc.

[9]The aim of this Appendix is not to assess current combat capabilities of the U.S., Soviet, and NSWP divisions, but to suggest a methodology for such assessment. Calculations in this appendix ignore the radically increasing survivability of Soviet tanks due to the recent extensive deployment of reactive armor in the USSR tank forces.

[10]*U.S. Senate Hearings*, 1982, p. 12.

and 1940 to completely replace the very old 1891/30 Mosin rifle, which dated back to tsarist times. But the new models were later withdrawn because they proved ineffective.[11] The same thing happened to the Soviet T-44 tank, which was to have replaced the T-34.

Likewise, the modification of weapons, however far-reaching, does not always establish a new generation. For example, the Soviet T-72 tank is in substance a modification of the T-64, so both these models must be counted as belonging to the same generation. To what extent, then, do combat capabilities of weapons change positively in relation to the previous generation? Of course, there is no general rule. Although the new generation of U.S. M1 Abrams tanks may be more than doubly superior to the previous M60, this does not mean that every new generation of Soviet tanks bears that same relation to its predecessor. What is decisive is the frequency of introduction of new generations of arms.

The supply of M60 tanks to the U.S. Army began in 1960; the successor to the M60, the M1 Abrams, was introduced on a mass scale in 1985, about 25 years later. In this same time span, the USSR produced three generations of tanks: the T-62, the T-64/72, and the T-80. It is understandable that the greater the time span between models, the greater the qualitative jump. Thus, the premise cannot be accepted that the T-64/72 is twice as good as the T-62, or that the T-80 will be twice as good as the T-72.

Moreover, in the present era of dynamically developing electronics, weapons that lack electronic features, such as small arms, cannot qualitatively outreach their predecessors to any great extent. The new generation of Soviet submachine guns, the 5.45-mm AK-74 assault rifle, is at best some 10 percent superior to its predecessor, the AK/AKM.[12] But where the decisive element of weapons is electronic/optronic, each new generation is qualitatively better than its predecessor.

All these considerations lead to clarifications of the WGC concept and to the qualitative coefficients proposed in Table B.3.

As Table B.3 shows, the basic qualitative criterion for successive generations of weapons is the specific gravity of electronics/optronics in the construction of the weapon. This accounts for the relatively great qualitative difference in antitank guided weapons (ATGWs), surface-to-air missiles (SAMs), and helicopters, and the minimal differences in weapons such as mortars, which have no electronic-optronic

[11]See D. N. Bolotin, *Sovetskoe strelkovoe oruzhie*, Moscow, Voenizdat, 1983, p. 69.

[12]This also applies, for example, to field artillery; qualitative differences between successive generations of Soviet guns, howitzers, and mortars are relatively small. This may explain the fact that in WP armies, the M-30 (produced since 1930) is still in service, along with the new D-30 122-mm howitzers.

Table B.3

WEAPON-GENERATION COEFFICIENTS

	Firepower							Strike Power			Antiaircraft Power		
		Artillery			Antitank Weapons								
Generation	Small Arms	Guns	Mortars	MRL	Guns	ATGW	RG	Tanks	MICV	Armed Helicopters	Small Arms[a]	AA Guns	SA Missiles
Latest	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Immediate predecessor	0.9	0.85	0.9	0.8	0.85	0.7	0.9	0.8	0.8	0.7	0.7	0.8	0.75
Earlier model	0.8	0.7	0.8	0.6	0.75	0.4	0.8	0.5	0.6	0.4	0.5	0.65	0.4
Obsolete	0.7	0.6	0.7	0.5	0.55	0.2	0.7	0.3	0.4	0.2	0.35	0.5	0.25

MRL = multiple rocket launchers; ATGW = antitank guided weapons; RG = recoilless antitank guns; MICV = mechanized infantry combat vehicles; AA = antiaircraft; SA = surface-to-air.

[a]SA-7 GRAIL class.

elements. The concepts "latest," "immediate predecessor," "earlier model," and "obsolete" generations of weapon are illustrated in Table B.4.

Category-Weight Coefficient (CWC). Two corrections should be made to the "category-weight" element if it is to be used as the basis for further calculations: The accepted mutual proportions among the various arms should be changed, and new coefficients should be introduced.

The proportions between an armored reconnaissance (recce) vehicle, which has a coefficient of 36, and a main combat tank, which has a coefficient of 64, seems, even at first glance, without foundation. This would imply that an M60A1 Patton tank with a weight of 48 tons, a 105-mm cannon, and up to 114-mm armor is worth only two M114 armored recce vehicles that weigh 6 tons each and have 12.7-mm machine guns and 10-times-thinner armor.

The same applies to recoiless guns (RGs), an increasingly obsolete weapon which has the same coefficient (27) as the newest and most effective antiarmor weapons, such as the ATGW systems. Even mortars have a high coefficient (37), which implies that two mortars are worth more on the battlefield than one M60A1 Patton tank, which is, of course, unreasonable. The relation between guns (72) and tanks (64), especially in offensive conditions, also seems unrealistic.

New, revised CWCs that take into account the relative combat values of Soviet arms should be used. New coefficients have been introduced for other arms, such as armed helicopters and antiaircraft

Table B.4

SOVIET/EAST EUROPEAN WEAPON GENERATIONS

Generation	Small Arms	Antitank Guns	Antitank Guided Weapons	Armored Personnel Carriers	Tanks
Latest	5.4mm AK-74	100mm T-12A	?	BTR-70/80	T-80[a]
Immediate predecessor	7.62mm AK/AKM	100mm M-44	AT-6 SPIRAL	BTR-60	T-64/72
Earlier model	7.62mm M-43 PS	100mm M-55	AT-5 SPANDREL	OT-64	T-62
Obsolete	7.62mm M-41 PPSh	57mm M-43	AT-2 SWATTER AT-1 SNAPPER	BTR-152	T-55 T-54 T-10

[a]The very newest Soviet tank, the SFT-1 with a 135mm gun, is not counted here because information about it is not available.

weapons. The revised offensive CWCs for Soviet weapons are given in Table B.5.

Not only firepower capabilities of the various arms, but also such factors as maneuverability, mobility, survivability on the nuclear battlefield, and offensive capabilities must be taken into account. All self-propelled vehicles, all tracked vehicles, and all amphibious to nonamphibious vehicles are decisively preferred for their offensive capabilities. However, the new coefficients proposed in Table B.5 were established by estimating, without scientifically founded tactical-technical test results, because data simply were not available. We shall return to this issue later, but for the present we have used the data in Table B.5 in our calculations.

Table B.5

THE WEAPONRY OF SOVIET OFFENSIVE DIVISIONS: CATEGORY WEIGHT COEFFICIENTS

Weaponry	Existing Coefficient[a]	Proposed Coefficient
Small arms	1	1
Armored personnel carriers	13	15
Armored recce vehicles	36	10
Mechanized infantry combat vehicles	27	25
Tanks (main battle tanks)	64	80
Antitank weapons		
Guns	27	15
ATGW	27	15
Recoilless guns	27	5
Artillery		
Towed guns	72	40
SP guns	72	65
Mortars	37	20
MRL	72	65
Armed helicopters[b]	—	150
Antiaircraft[b]		
Small arms[c]	—	5
Towed guns	—	15
SP guns	—	25
Missiles launchers	—	55

[a]Used in U.S. Army, *Weapon Effectiveness Indices/Weighted Unit Values*, op. cit., Tables A-10, A-11, A-12, A-13.
[b]Not classified in the above-mentioned source.
[c]SA-7b GRAIL class.

WEIGHTED VALUE CALCULATIONS

Active Divisions

Using the ADE method and the modified criteria for comparative elements, we obtain the comparison shown in Tables B.6 through B.12.

As the comparative base, a Soviet armored (tank) division of Category 1 readiness, stationed in the Soviet Group of Forces in Germany (GSFG), has been taken as the point of reference. Among all Soviet divisions, those stationed with Soviet groups of forces abroad, especially in East Germany, have the most modern equipment[13] and are the strongest numerically. The full wartime strength and all known changes in the structure and capabilities of the Soviet armored division have been taken into account.

Tables B.8 through B.12 present the relative values of equipment in East European divisions according to degree of combat readiness. In each case, the wartime *and not peacetime* strengths are considered.[14] It should be stressed that in case of a war (after a general mobilization), these divisions would differ (e.g., Categories 1 and 2 armored divisions) not in numbers of personnel or amount of equipment, but in modernity of equipment. The most modern equipment appears in Category 1 divisions, and the most antiquated in Category 3 divisions; Category 2 divisions have something in between. For instance, both Category 2 and 3 divisions have T-55 tanks, introduced in the WP armed forces about 30 years ago. Those in Category 3 are the oldest and do not have any of the improvements introduced later in production. (There are also Category 4 divisions, which are equipped with weapons even older than those discussed here; these are the East European Reserve Divisions, which will be established only in the case of general mobilization. They are discussed later.)

Because information is not available about the TO&E of East European divisions, we have used analogous organizational charts of Soviet divisions and their TO&E published in U.S. sources. This does not devalue the present work, since in the framework of unification and

[13]However, some of the latest-model Soviet weapons and other combat equipment may go first to Category 1 divisions stationed inside the USSR to prevent outside knowledge of their existence.

[14]The peacetime divisional strength of these East European formations ranges from 25 percent to 90 percent of their wartime TO&E.

Table B.6

RELATIVE VALUES OF EQUIPMENT IN A SOVIET ARMORED DIVISION, CATEGORY 1[a]

Weapon Category	Number of Weapons	×	Weapon Effectiveness Index	×	Category Weight (offensive)	=	Weighted Value
Small arms	2,080[b]		1.00		1		2,080
Armored personnel carriers (BTR-70)	96		1.00		15		1,440
Mechanized infantry combat vehicles (BPM-2)	208[b]		1.00		25		5,200
Armored recce vehicles	34		1.00		10		340
Antitank weapons							
Guns	0		1.00		15		0
ATGW	15		1.00		15		225
RG	0		1.00		5		0
Tanks	322[c]		1.00		80		25,760
Artillery							
Towed guns	36		1.00		40		1,440
SP guns	90		1.00		65		5,850
Mortar	36		1.00		20		720
MRL	18		1.00		65		1,170
Armed helicopters	24[d]		1.00		150		3,600
Antiaircraft							
Small arms	162		1.00		5		810
Towed guns	16		1.00		15		240
SP guns	16		1.00		25		400
Missile launchers	36		1.00		55		1,980
Weighted unit value	—		—		—		51,255
Armored division equivalent	—		—		—		1.00

[a]Using the TO&E shown in *Organization and Equipment of the Soviet Army*, Threat Branch, U.S. Army Armor Center, Fort Knox, Kentucky, January 1981, pp. 2–11, and updated using the latest available figures in: *Military Balance 1986–1987*, IISS, London; *Soviet Military Power 1987*, U.S. Government Printing Office, Washington, DC, 1987; *Soviet Armed Forces Review Annual*, Vol. 7, Academic International Press, Gulf Breeze, Fla., 1983 and other sources. Counting the most recent introduction of artillery battalions and mechanized infantry battalions to tank regiments, which created the total strength of a Soviet 1st Category armored division (in GSFG) of: 10 tank battalions, 6 mechanized infantry battalions, 9 artillery battalions (not counting FROG battalions), and the recce battalion.

[b]Assumes 208 BMP fighting vehicles in the 6 mechanized infantry battalions, and in the divisional and regimental recce units, with 10 infantrymen per vehicle.

[c]Counted tank T-80 class. *Soviet Military Power 1987*, op. cit., reported 330 tanks per division (p. 74).

[d]Assumed.

Table B.7

RELATIVE VALUES OF EQUIPMENT IN A SOVIET MOTORIZED RIFLE DIVISION, CATEGORY 1
(Estimated)

Weapon Category	Number of Weapons	×	Weapon Effectiveness Index	×	Category Weight (offensive)	=	Weighted Value
Small arms	4,980		1.0		1		4,980
Armored personnel carriers (BTR-70)	117		1.0		15		1,755
Mechanized infantry combat vehicles BPM-2)	334		1.0		25		8,350
Armored recce vehicles	55		1.0		10		550
Antitank weapons							
Towed guns 100mm	18		1.0		15		270
ATGW/BRDM	27		1.0		15		405
ATGW/manpack	24		1.0		15		360
RG	12		1.0		5		60
Tanks (T-72)	271		0.8		80		17,344
Artillery							
Towed guns,122mm	72		1.0		40		2,880
SP guns, 122mm and 152mm	36		1.0		65		2,340
Mortars, 120mm or 82mm automatic	60		1.0		20		1,200
MRLs	18		1.0		65		1,170
Armed helicopters	24		1.0		150		3,600
Antiaircraft							
Small, SA-7 GRAIL class	162		1.0		5		810
SP guns, ZSU-3-4	16		1.0		15		240
SP missile launchers	36		1.0		55		1,980
Weighted unit value	—		—		—		48,272
(Soviet) armored division equivalent	—		—		—		0.94

NOTE: Counting the TO&E of the Soviet Motorized Rifle Division shown in *Organization and Equipment of the Soviet Army*, Threat Branch, U.S. Army Armor Center, Fort Knox, Kentucky, January 1981, pp. 2–11, and updated using the available figures published in: *Soviet Military Power 1987*, U.S. Government Printing Office, Washington, DC, 1987; *Military Balance 1986–1987*, IISS, London, 1986; *Jane's Defence Weekly*, 1986–1987; *Soviet Armed Forces Review Annual*, Vol. 8, Academic International Press, Gulf Breeze, Fla., 1984, Richard Simpkin, *Red Armor*, Brassey's Defence Publishers, Oxford, 1984, and other sources. Counting the divisional independent tank battalion, introduction of artillery battalions and mechanized infantry battalions to tank regiments in Motorized Rifle Divisions, which created the total strength of these divisions of 1st Category (in GSFG) of: 10 mechanized infantry battalions, 7 tank battalions, and 9 artillery battalions. The 24 armed helicopters are the author's assumption.

The 1988 issue of the Pentagon's *Soviet Military Power* reports the following figures for a typical Soviet motorized rifle division: 270 tanks, 680 APC/IFVs, and 215 artillery pieces (p. 74). Thus the number of tanks is the same as given in this table, and the numbers of the other weapons are different. Because of the lack of detailed data, we will use the numbers in the table.

Table B.8

RELATIVE VALUES OF EQUIPMENT IN AN EAST EUROPEAN ARMORED DIVISION, CATEGORY 1
(Estimated)

Weapon Category	Number of Weapons	×	Weapon Effectiveness Index	×	Category Weight (offensive)	=	Weighted Value
Small arms	1,470		0.9		1		1,323
Mechanized infantry combat vehicles	147		0.8		25		2,940
Armored recce vehicles	47		0.8		10		376
Armored personnel carriers	96		0.8		15		1,152
Antitank weapons							
Guns	0		—		—		0
ATGW	9		0.7		15		95
RG	0		—		—		0
Tanks (T-72)	322		0.8		80		20,608
Artillery							
Towed guns,122mm	54		1.0		40		2,160
SP guns, 122mm	36		1.0		65		2,340
Mortars, 120mm	18		1.0		20		360
MRLs	18		0.8		65		936
Armed helicopters	10		1.0		150		1,500
Antiaircraft							
Small arms	75		1.0		5		325
SP guns	16		1.0		15		240
Missile launchers	36		0.75		55		1,485
Weighted unit value	—		—		—		35,840
(Soviet) Armored division equivalent	—		—		—		0.70

NOTE: Utilizing the Soviet TO&E shown in *Organization and Equipment of the Soviet Army*, op. cit., pp. 2-11, plus 10 armed helicopters (author's estimate).

Table B.9

RELATIVE VALUES OF EQUIPMENT IN AN EAST EUROPEAN ARMORED DIVISION, CATEGORY 2

(Estimated)

Weapon Category	Number of Weapons	×	Weapon Effectiveness Index	×	Category Weight (offensive)	=	Weighted Value
Small arms	1,470		0.9		1		1,323
Mechanized infantry combat vehicles	147		0.8		25		2,940
Armored recce vehicles	47		0.8		10		376
Armored personnel carriers	96		0.8		15		1,152
Antitank weapons							
ATGW	9		0.7		15		95
Tanks (T-55)	322		0.5		80		12,880
Artillery							
Towed guns	54		0.85		40		1,836
SP guns	36		1.0		65		2,136
Mortars	18		1.0		20		360
MRLs	18		0.8		65		936
Armed helicopters	10		0.7		150		1,050
Antiaircraft							
Small arms	75		1.0		5		325
SP guns	16		1.0		15		240
Missile launchers	36		0.4		55		792
Weighted unit value	—		—		—		26,441
(Soviet) armored division equivalent	—		—		—		0.52

NOTE: Counting exactly the same number of weapons as in Table B.8. The differences are here only in some weapon effectiveness index values. (This concerns, first of all, tanks, and also towed guns, armed helicopters and missiles AA launchers, which are counted in a lower weapon generation class than those listed in Table B.8).

Table B.10

RELATIVE VALUES OF EQUIPMENT IN AN EAST EUROPEAN MOTORIZED RIFLE DIVISION, CATEGORY 1

(Estimated)

Weapon Category	Number of Weapons	×	Weapon Effectiveness Index	×	Category Weight (offensive)	=	Weighted Value
Small arms	4,980		0.9		1		4,482
Mechanized infantry combat vehicles BMP-1	117		0.8		25		2,340
Armored recce vehicles	55		0.8		10		440
Armored personnel carriers	334		0.8		15		4,008
Antitank weapons							
Towed guns	18		0.85		15		230
ATGW/BRDM	27		0.7		15		284
ATGW/manpack	24		0.4		15		144
RG	12		1.0		5		60
Tanks (T-55)	271		0.5		80		10,840
Artillery							
Towed guns	72		0.85		40		2,448
SP guns	36		1.0		65		2,340
Mortars	54		1.0		20		1,080
MRLs	18		0.8		65		936
Armed helicopters	8		0.7		150		840
Antiaircraft							
Small, SA-7 GRAIL class	120				5		420
SP guns, ZSU-23-4	16		1.0		15		240
Missiles launchers	36		0.4		55		792
Weighted unit value	—		—		—		31,924
(Soviet) armored division equivalent	—		—		—		0.62

NOTE: Counting the TO&E shown in *Organization and Equipment of the Soviet Army*, Fig. 2-1, "Motorized Rifle Division," p. 2-1, including the independent tank battalion. Eight armed helicopters added.

Table B.11

RELATIVE VALUES OF EQUIPMENT IN AN EAST EUROPEAN MOTORIZED RIFLE DIVISION, CATEGORY 2

(Estimated)

Weapon Category	Number of Weapons	×	Weapon Effectiveness Index	×	Category Weight (offensive)	=	Weighted Value
Small arms	4,980		0.9		1		4,482
Mechanized infantry combat vehicles	25		0.8		25		500
Armored recce vehicles	30		0.6		15		270
Armored personnel carriers	451		0.6		15		4,059
Antitank weapons							
Towed guns	18		0.85		15		230
ATGW/BRDM	27		0.4		15		162
ATGW/manpack	24		0.4		15		144
RG	12		0.85		5		51
Tanks (T-55)	214		0.5		80		8,560
Artillery							
Towed guns	72		0.85		40		2,448
SP guns	36		0.7		65		1,638
Mortars	54		0.9		20		972
MRLs	18		0.65		65		760
Armed helicopters	0		—		—		0
Antiaircraft							
Small, SA-7 GRAIL class	120		0.5		5		300
SP guns, ZSU-23-4	16		0.8		15		192
Missiles launchers	36		0.4		55		792
Weighted unit value	—		—		—		25,368
(Soviet) armored Division Equivalent	—		—		—		0.49

NOTE: Counting the TO&E mentioned in Table B.10, but not including the independent tank battalion and armored helicopters. Instead of BMP, which remain here only in recce units, we counted armored personnel carriers OT-64.

Table B.12

RELATIVE VALUES OF EQUIPMENT IN AN EAST EUROPEAN MOTORIZED RIFLE DIVISION, CATEGORY 3

(Estimated)

Weapon Category	Number of Weapons	×	Weapon Effectiveness Index	×	Category Weight (offensive)	=	Weighted Value
Small arms	4,760		0.8		1		3,008
Mechanized infantry combat vehicles	25		0.8		25		500
Armored recce vehicles	30		0.6		15		270
Armored personnel carriers	451		0.4		15		2,706
Antitank weapons							
Towed guns	18		0.75		15		202
ATGW/BRDM	27		0.4		15		162
ATGW/manpack	24		0.4		15		144
RG	12		0.85		5		51
Tanks							
T-54	120		0.35		80		3,360
T-55	94		0.45		80		3,384
Artillery							
Towed guns	90		0.5		40		1,800
SP guns	18		0.5		65		585
Mortars	54		0.7		20		756
MRLs	18		0.5		65		585
Armed helicopters	0		—		—		0
Antiaircraft							
Small, SA-7 class	120		0.5		5		300
SP guns, ZSU-23-4	16		0.8		15		192
Missile launchers	36		0.25		55		495
Weighted unit value	—		—		—		19,300
(Soviet) armored division equivalent	—		—		—		0.38

NOTE: Using the same TO&E mentioned in Table B.11, but counting T-55 tanks only in the tank regiment; the tank battalions in motorized rifle regiments are fitted here with T-54 tanks. Also, the values of the weapon effectiveness index here are much lower than in Table B.11.

standardization of WP combat capabilities, the wartime Soviet and East European divisional establishments are very similar.

The ADE values in Tables B.6 through B.12 show the differences among the various types of East European divisions with regard to a Category 1 Soviet armored division, as shown in Table B.13. This table also shows the differences in ADE among the various types of East European divisions in relation to an East European Category 1 armored division, which, for purposes of comparison with the remaining East European divisions, has been given a coefficient of 1.00.

The Short-Evaluation Variant of the ADE Method

To obtain the data in Table B.13, we first made extensive calculations, taking into consideration 25 to 30 types of key firepower equip-

Table B.13

COMPARISON OF SOVIET AND EAST EUROPEAN ARMORED DIVISION EQUIVALENTS
(Estimated)

Division	Index
Soviet GSFG Divisions vs Northern Tier East European Divisions	
Soviet armored division, Category 1 (in GSFG)	1.00
Soviet motorized rifle division, Category 1	0.94
East European armored division, Category 1	0.70
East European armored division, Category 2[a]	0.52
East European motorized rifle division, Category 1	0.62
East European motorized rifle division, Category 2	0.49
East European motorized rifle division, Category 3	0.38
East European reserve division	0.30[b]
East European Northern Tier Armored Division, Category 1, vs All Other East European Northern Tier Divisions	
East European armored division, Category 1	1.00
East European armored division, Category 2[a]	0.74
East European motorized division, Category 1	0.88
East European motorized division, Category 2	0.71
East European motorized division, Category 3	0.54
East European reserve division	0.42[c]

[a]In East European forces, excluding Czechoslovakia, there are probably no Category 3 armored divisions.

[b]Or 0.40 with regard to the East German reserve divisions (this is described later).

[c]Or 0.56 with regard to the East German reserve divisions.

ment (in fact, still more would be required to provide truly accurate measures). Even in the case of small arms, the ADE-method CWC of 1.00 (which we have used) is not very accurate. A variety of small arms were thrown into one pot, e.g., rifles, submachine guns, and machine guns—which in turn belong to the light (5.45-mm), medium (7.62-mm), and heavy (12.7- to 14.5-mm) caliber subcategories. Finally, the small-arms category should also include such weapons as rocket antitank grenade launchers (RPG-7 class) and automatic grenade launchers (AGS-17 class), which also have different tactical-technical characteristics and thus different firepower coefficients. The same is true for artillery, to an even greater degree; artillery may be self-propelled or towed, and includes guns and mortars. Other relevant differences include caliber size and amphibious vs. nonamphibious.

To increase the accuracy of the ADE coefficient assigned, we would have to consider the combat capabilities of all the different types of weapons used by the Soviet and East European divisions and apply CWCs appropriate to their characteristics. But this would make the calculations still more cumbersome.

Therefore, another simplified variant of the ADE method is applied for tanks and armed helicopters and their WEI for armored divisions and motorized-rifle divisions, which include both APCs and mechanized infantry combat vehicles (MICVs). This variant is shown in Table B.14. The results obtained by the "classic" ADE method and this variant are almost identical.

As a footnote to these considerations, we note that Soviet and East European divisions in World War II almost never had the numerical strength consistent with their TO&E. They were sent out either from the areas where they were formed or from the Supreme High Command (RVGK) reserve to the front combat zones without meeting their norms of accessory equipment, or they sustained great losses in battle and replacements were insufficient. Instead of 11,000 to 12,000 men, Soviet infantry divisions[15] numbered, on average, not more than 4,000 men. This was true of tank formations to an even greater extent.[16]

This could well be the case in any new war as well, not to mention the losses that could be sustained on a nuclear battlefield. The wartime ADE method thus should be calculated not by units, but by actual numerical arms levels.

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[15]The TO&E of Soviet infantry divisions changed five times during World War II, not counting small changes, which took place about fifty times.

[16]One Soviet marshal recalled in his memoirs that in August 1942, the Soviet 1st Tank Army "possibly had that numbering because in the whole of that Army there was only one tank." We find that it had in fact not one but "as many as 40 tanks," still far below the 625 TO&E allocation.

Table B.14

ARMORED DIVISION EQUIVALENT (ADE): SHORT METHOD OF COMPARISON

Division	ADE	Tanks, Armed Helicopters, and Armored Vehicles: Weighted Value	Short ADE
Soviet armored division, Category 1	1.00	29,360[a]	1.00
East European armored division, Category 1	0.70	22,108[a]	0.75
East European armored division, Category 2	0.52	13,930[a]	0.47
East European motorized rifle division, Category 1	0.62	18,028[b]	0.61
East European motorized rifle division Category 2	0.49	13,119[b]	0.45
East European motorized rifle division Category 3	0.38	9,950[b]	0.34

[a]Counting only the weighted value of tanks and armed helicopters.
[b]Counting the weighted value of tanks and armed helicopters, as well as mechanized infantry vehicles and armored personnel carriers.

Reserve Divisions

This analysis has been concerned with active (in peacetime) divisions only. However, in case of a general mobilization, reserve divisions will also be formed in East European countries.

Soviet military doctrine assumes the possibility that a future war in Europe, as elsewhere, may become protracted, implying the need to create new divisions that do not exist in peacetime. How many East European reserve divisions will be formed, particularly on the Northern Tier? It is known that East Germany can have four reserve divisions. We have no comparable data for Czechoslovakia and Poland; but since all East European countries must cover immediate active division needs as well as the formation of new divisions[17] and also Internal Front units, the following numbers of East European reserve divisions (for the first wave[18]) can be assumed:

[17]According to IISS, *The Military Balance, 1987–88,* East German ground forces have 330,000 first-line reservists, as compared with 71,500 conscripts in active service; Czechoslovakia has, respectively, 270,000 and 100,000, and Poland has 430,000 and 168,000.

[18]Mobilizations plans probably include reserve divisions as well; which will be mobilized in ensuing waves.

Country	Reserve Divisions
East Germany	4
Czechoslovakia	5
Poland	10
Total	19

Numbers for Czechoslovakia and Poland were derived by analogy to the four East German divisions, duly considering their greater military potential.

What type of divisions will the reserve divisions be? It should be assumed that they will be mainly—perhaps exclusively—motorized rifle divisions, which are easier to create from scratch than armored divisions. What will the ADE of these divisions be? Naturally, it will be lower than that of the last active-division ADE, i.e., below the 0.39 assumed for Category 3 motorized rifle divisions. Provisionally, as a rough guide, we assume that East European reserve motorized rifle divisions will have an average ADE of 0.30. However, East German reserve divisions may have a relatively higher ADE—perhaps 0.40—because East Germany has no active divisions in peacetime below Category 1. Thus, as their equipment is updated, the superseded weapons are not passed down to divisions of lower combat readiness, but are sent directly to mobilization stores.[19] In other countries, e.g., Poland, the equipment intended for formation of reserve divisions in case of mobilization may be significantly more outdated and worn.

Thus, we have a (highly tentative) ADE coefficient for East European reserve divisions, with which we can attempt a general compilation of East European division combat potential relative to an ADE coefficient of 1.00 (i.e., relative to a Soviet Category 1 armored division in the GSFG). This is shown in Table B.15.

OTHER ELEMENTS OF COMBAT POTENTIAL

Divisional

The ADE method counts only firepower equipment (and, as mentioned, not all its elements). Although firepower equipment is, admit-

[19] At present, 1,200 T-34 and T-54/55 tanks are in storage in East Germany (see IISS, *The Military Balance, 1987–1988*). *This allows for the creation of at least four new motorised rifle divisions. There are no available figures for the tank storage in other NSWP countries, but by analogy, we can assume that there is at least a proportionally similar amount of reserve tanks and other combat means.*

Table B.15

ESTIMATED WARTIME COMBAT POTENTIAL OF EAST EUROPEAN DIVISIONS COMPARED WITH ADE COEFFICIENT FOR A SOVIET ARMORED DIVISION, CATEGORY 1, IN GSFG

GDR	
2 armored divisions, Category 1	× 0.70 = 1.40
4 motorized rifle divisions, Category 1	× 0.62 = 2.48
4 reserve divisions	× 0.40 = 1.60
Total	4.88
Czechoslovakia	
3 armored divisions, Category 1	× 0.70 = 2.10
2 armored divisions, Category 2	× 0.52 = 1.04
3 motorized rifle divisions, Category 1	× 0.62 = 1.86
2 motorized rifle divisions, Category 2	× 0.49 = 0.98
5 reserve divisions	× 0.30 = 1.50
Total	7.48
Poland	
4 armored divisions, Category 1	× 0.70 = 2.80
1 armored division, Category 2	× 0.52 = 0.52
3 motorized rifle divisions, Category 1	× 0.62 = 1.86
4 motorized rifle divisions, Category 2	× 0.49 = 1.96
3 motorized rifle divisions, Category 3	× 0.38 = 1.14
10 reserve divisions	× 0.30 = 3.00
Total	11.08

NOTES: The East German divisions are all of Category 1, as is commonly known; the Czech and Polish divisions are divided into their various degrees of combat readiness according to the author's estimate. (See Table 3.) The amphibious division is also counted among the Category 2 Polish motorized rifle divisions. The Polish Category 3 motorized rifle divisions include the airborne division.

tedly, the most important equipment, it is far from being the only type of equipment in an armored or motorized rifle division. All ground forces are equipped with C^3I hardware (radio, radar, signal, etc.), engineering facilities (river-crossing, obstacle-clearing, mine-laying, remote minefield-laying, etc.), transport, and a great deal more.[20] This other equipment exerts a significant influence on combat potential and should also be considered in any calculations.

However, we can only compare like with like. How can river-crossing equipment be compared with artillery or tanks? What ADE coefficients would be appropriate?

[20]The Soviet motorized rifle regiment alone has more than 70 *main* kinds of different combat equipment; a list of 74 types was published in *Jane's Defence Weekly*, November 24, 1984, p. 938.

Comparison of non-firepower equipment of East European divisions with that of Soviet divisions could greatly complicate the process of divisional comparisons, so we abandoned that idea. In any case, divisions of greater peacetime combat readiness possess the most modern equipment—not only firepower equipment but all other types as well. Thus, firepower equipment can serve as a *general* indicator of combat potential. The other elements of combat potential mentioned in the Soviet definition of the concept are considered briefly below.

Number of Personnel. This is not a relevant element. Combat capabilities are decisively influenced only by the personnel intended for fighting, and since the ADE method counts all basic units of firepower, the number of personnel is indirectly included in the calculation. It is irrelevant that Soviet Category 1 armored divisions have 322 soldiers less than East European Category 2 tank divisions, since the difference stems from the fact that T-72s (and very probably the T-80s) have three-man crews, while the T-55s and T-62s have four-man crews. The extra man is needed to load the older tank cannons; in the later models, this function is automated. The same applies to artillery: The old, towed 122-mm howitzer has an eight-man crew, while the modern self-propelled M-1974 model has only a four-man crew.

Degree of Military Training. This is an enormously important element but, again, we can omit it, at least for peacetime divisions. In peacetime, the degree of combat training is directly proportional to the established degree of combat readiness. This results chiefly (though not solely) from the relationship between peacetime and wartime numerical strength. In WP armies, a considerable proportion of soldiers are regularly taken away from training for internal duty, garrison duty, storing and preservation of equipment, and even to help with harvests and other nonmilitary tasks, such as dealing with the effects of natural disasters, etc. These activities may constitute more than 50 percent of the time allotted for the annual training curriculum.

The larger the unit, the easier it is to spread extracurricular activities among the soldiers. Conversely, numerically small units are proportionately more encumbered. That is why Category 3 East European and Soviet divisions actually complete only one-third of the training programs completed by the Category 1 divisions.[21] The degree of combat training is in large measure set by the established degree of combat readiness for a given division.[22]

[21]This is not the case for officer training. Officers are trained with almost equal intensity in all three divisional categories, with the exception of field training, where they are hindered by the absence of enlisted personnel.

[22]The duration of military service for draftees varies in East European forces, from 16 months (Romania) to 18 months (East Germany and Hungary) to 24 months (all remain-

Troop-Control Capabilities. Troop control depends on the degree of training of the officer cadres and the quantity and quality of C^3 equipment. Again, the degree of combat readiness is decisive. Higher-category divisions have a higher level of training, better equipment, and more equipment (e.g., more radios, radars, computers, automated command systems, etc.).

Organizational Structure. The basic elements of troop structure, which directly influence combat capabilities, are expressed as the amount of equipment, especially firepower equipment. In contrast to the NATO divisional structure, the WP has an integrated, standard organizational structure for all its Northern Tier ground force divisions.

Therefore there are no major differences between the structure of Soviet and, say, Czechoslovak armored divisions of the same readiness category (with the exception of Soviet divisions in the GSFG, which have a special status).

The morale and political state of Soviet and non-Soviet divisions and of the various national armies of the Pact is extremely important. Reliability of the East European divisions with respect to the Soviet armed forces constitutes a separate problem, not comparable with the other factors.

Supporting Means and Forces

Finally, the fact that East European divisions would very rarely go into action without reinforcement from higher levels should be taken into account. In World War II, this rule applied virtually without exception, particularly during offensive operations. The reinforcement was great and, with the exception of infantry, often exceeded the organic divisional means. Sometimes more guns, howitzers, and mortars (above 82-mm caliber) were placed at the disposal of given divisions by a higher-level command (corps, army, front, and sometimes units of reserves of the Supreme High Command) than the divisions organically possessed. These divisions were strengthened not only by field artillery, but also by tanks (one battalion to one brigade of tanks), SP guns and howitzers (up to one regiment), antitank artillery (one battalion to one brigade), antiaircraft artillery (up to one battalion), etc. The divisions were also strengthened by engineering and chemical

ing countries). One could conclude from this that, for example, a Czechoslovak draftee is about one-third more skilled than a Romanian draftee, and therefore Czechoslovak troops should have the same advantage in the training-value coefficient. However, in fact, all East European (and Soviet) armies have only a one-year training program for draftees. In the second year of service, the draftees simply repeat the program.

units and subunits, as well as other troops. In addition, specially designated units—sometimes even formations—of aviation operated to their advantage.

Thus in World War II, East European divisional combat potential consisted of both organic means and forces and higher-level means and forces. Today, Soviet and East European ground force divisions have attained a high degree of operational autonomy, as expressed in their TO&Es, which anticipates completely satisfactory levels of organic tanks, SP guns, AA and ATK means, engineering facilities, and even helicopters, not to mention nuclear surface-to-surface missile launchers. Thus, divisional reinforcement needs have decreased. In particular, there is no further need to assign tanks to motorized rifle divisions. The scale of support of other combat means has also noticeably decreased. If the ratio of organic divisional weapons to supporting weapons was, on average, 1 to 1 during World War II, today it would be 1 to 0.2–0.4 in favor of the organic, divisional weapons. It appears that, on average,[23] a contemporary East European division will have 30 percent more weapons assigned for the duration of a given operation. (Of course, the weapons will be accompanied by the units and subunits that man them and support the division.)

Soviet divisions may count on reinforcement from the four command tiers above them: army, front, theater of military operations reserves, and Supreme High Command reserves. All four levels have troops that may be used in wartime to reinforce subordinate levels, including that of division. Polish and Czechoslovak divisions must rely on only two national levels: army and front. These divisions will receive front-level unit combat support even if national fronts are not formed because front level units will remain in being.[24] (East German divisions will have support only from the army level, because East Germany has no front-level units.)

It is obvious that Soviet divisions will be better off than the East European divisions in terms of higher-level unit reinforcements. This does not mean, however, that East European divisions will always be at a disadvantage or more weakly supported than Soviet divisions. As in World War II, they will frequently be supported by Soviet higher-level formations, units, and subunits. Those East European divisions exe-

[23]Depending on many factors, the scale of reinforcement of East European divisions may vary greatly on the different attack axes.

[24]As in World War II, when, for example, the Polish 9th Infantry Division was supported by the 14th ATK Brigade in the Luzhice Operation. This ATK Brigade was established as a front-level formation, to serve in the framework of the Polish Front. After the idea of a Polish Front was given up, the brigade was assigned to the Polish 2nd Army, and from that level to the 9th Infantry Division.

cuting the more important major task at a given moment will certainly be reinforced by higher-level Soviet troops (aviation, helicopter units, long-range artillery, etc.) in preference even to Soviet divisions fighting on secondary directions and executing secondary tasks.

Nonetheless, East European divisions will have to draw on their own higher-level national unit support first. Thus a comparison of the combat potential of East European army- and front-level units with Soviet units above the divisional level is of great relevance.

The ADE method, or, to be more precise, the rules informing this method, may be used in this case. Naturally, the point of reference will not be the Soviet armored divisions but the formations and units—field, antitank, antiaircraft artillery, rocket troops, helicopters, aviation, etc.—above that level.

What purpose can this analysis serve? For argument's sake, let us assume that a Soviet army-level artillery brigade has a weighted unit value coefficient of 1.00 and a similar Polish brigade has a coefficient of 0.50, as do two specific East European divisions. One of these divisions, it is assumed, has been supported by the Soviet artillery brigade, the other by the Polish one. This fact alone indicates the considerable difference in the combat potential of these two East European divisions. If we consider not only the artillery formations in this example, but also all the remaining supporting formations and units, we can obtain a concrete combat potential estimate of the given East European division—remembering that it is composed of both organic means and forces and supporting means and forces, for only their combined power establishes actual combat capabilities. (See Tables B.16 and B.17.)

CONCLUDING REMARKS

The suitably adapted and improved ADE method is perhaps the most effective method for comparing the combat potential of East European divisions with that of their Soviet counterparts. This improved method may be extended to all other East European troops and armed services at all command levels, both in peacetime and in wartime. For lack of accessible data, a tentative comparison was made with regard to present deployment of East European divisions.

Table B.16

RELATIVE VALUES OF EQUIPMENT IN A SOVIET ARMORED DIVISION, CATEGORY 1: CHANGING THE CATEGORY WEIGHT COEFFICIENT

Weapon Category	Number of Weapons	×	Weapon Effectiveness Index	×	Category Weight (offensive)	=	Weighted Value
Small arms	2,080		1.00		0.5		1,040
Mechanized infantry combat vehicles	208		1.00		30		2,600
Armored recce vehicles	34		1.00		20		680
Armored personnel carriers (BTR-70)	96		1.00		30		2,080
Antitank weapons							
Guns	0		1.00		7.5		0
ATGW	15		1.00		30		450
RG	12		1.00		2.5		30
Tanks (T-80 class)	322		1.00		160		51,520
Artillery							
Towed guns	36		1.00		20		720
SP guns	90		1.00		130		11,700
Mortars	36		1.00		10		360
MRLs	18		1.00		130		2,340
Armed helicopters	24		1.00		75		1,800
Antiaircraft							
Small arms	162		1.00		10		1,620
Towed guns	16		1.00		7.5		120
SP guns	16		1.00		50		800
Missile launchers	36		1.00		27.5		990
Weighted unit value	—		—		—		79,650
Armored division equivalent	—		—		—		1.00

Table B.17

RELATIVE VALUES OF EQUIPMENT IN AN EAST EUROPEAN ARMORED DIVISION, CATEGORY 1: CHANGING THE CATEGORY WEIGHT COEFFICIENT

Weapon Category	Number of Weapons	×	Weapon Effectiveness Index	×	Category Weight (offensive)	=	Weighted Value
Small arms	1,470		0.9		0.5		662
Mechanized infantry combat vehicles	147		0.8		12.5		1,470
Armored recce vehicles	47		0.8		20		752
Armored personnel carriers	96		0.8		30		2,304
Antitank weapons							
Guns	0		—		7.5		0
ATGW	9		0.7		30		189
RG	0		0.5		2.5		0
Tanks (T-72)	322		0.8		160		41,216
Artillery							
Towed guns	54		1.0		20		1,080
SP guns	36		1.0		130		4,680
Mortars	18		1.0		10		180
MRLs	18		0.8		130		1,872
Armed helicopters	10		1.0		75		750
Antiaircraft							
Small arms	75		1.0		10		750
Towed guns	16		1.0		7.5		120
Missile launchers	36		0.75		27.5		743
Weighted unit value	—		—		—		56,768
Armored division equivalent	—		—		—		0.71

Appendix C

NUMERICAL DESIGNATION OF NSWP ARMIES

The numerical designation of the East European armies, shown in Fig. 12, is provisional only, especially with respect to the two GDR armies.

The existence of the Polish and Czechoslovak armies within the framework of the East European/Soviet coalition in World War II has been taken into account. The Polish forces had three armies: 1st, 2nd, and 3rd. The numbers of these armies are closely tied with a particular historical period in the development of the Polish forces, so it should be expected that numbers in the modern Polish armies, in wartime, will be new. Those numbers will probably be based on:

- The units deployed in the Pomeranian Military District, 4th Army.
- The units deployed in the Silesian Military District, 5th Tank Army.
- The units deployed in the Warsaw Military District, 6th Army.
- The Polish Air Army (tactical), if established, becoming the 1st Polish Air Army.

The same may apply to the Czechoslovak armies. In World War II, they had, consecutively, the 1st Corps and the 1st Army; modern wartime Czechoslovak armies may appear as follows:

- The Northwestern Military District, with Headquarters in Pisek, may establish the 2nd Army.
- The Southwestern Military District, with Headquarters in Pribram, may establish the 3rd Army.
- The Eastern (Slovakian) Military District may set up the 4th Army or the 2nd Independent Corps.
- The Czechoslovak Air Force may be concentrated in a 1st Air Army.

The numbers of the two GDR armies are, provisionally, taken to agree with the numbers of their parental Military Districts: No. 5 in the North and No. 3 in the South. The GDR has the capacity to activate an additional two to four divisions (motorized rifle) at short notice, but they will probably join the two existing GDR armies, so these forces will each have four to five divisions instead of three in peacetime.