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The NATO Central Region and

by Anthony H. Cordesman

Western security is dependent on many military balances, and each presents its separate hope of peace and risk of war.

A Norwegian depth charge could trigger a low-level naval conflict off the north Cape and make the local balance of naval forces critical. Arms smuggling or assassination could bring Turkey to the edge of war with Bulgaria or the Soviet Union and make the Southern Flank balance critical.

A war could escalate out of a Soviet invasion of Iran which would suddenly involve NATO in a conflict to protect its oil supplies in a region thousands of miles from Europe. A riot in East Germany or a misfired missile could suddenly lead to a conflict in the Central Region.

Even within a given balance, much depends on warning and politics. The Soviet Union may or may not deliberately initiate a conflict. The USSR may depend on forces in being, covert build-up, or overt deployment of the maximum forces it can bring to bear. The Soviet Union may use a given balance to put political pressure on the West or divide it without resorting to arms. If a conflict does occur, it may or may not be limited to a single region of NATO or even to a single country.

NATO must have the proper mix of military strength to deal with all these balances. The West's security is dependent on its ability to create a reasonable deterrent in every area where there is a meaningful risk of war.

The Importance of the Central Region Balance

Two balances, however, are far more critical than the others. NATO can lose many small confrontations or conflicts. It cannot, however, risk more than the most minor loss of territory in the Central Region or engage in more than the most limited use of nuclear weapons without defeating its purpose. To succeed as an alliance, NATO must succeed in deterring a major armored attack on the Central Region, and it must deter escalation to nuclear war.

While nuclear deterrence is currently receiving the most political attention, Western unity and security are just as dependent on deterring Warsaw Pact armored attacks on West Germany. A limited or even major defeat on either flank would be drastic but survivable. The

USSR would also face the risk that such a defeat would unite the West into action and the West would fully commit its immense economic and technical resources.

The occupation or neutralization of Germany, however, would shatter NATO's defense structure, the European Economic Community and OECD. NATO's failure to defend West Germany might well thrust France into isolation or neutralization; it would force the smaller European countries to give way to Soviet political pressure and lead Asian and Third World countries to turn away from the West.

Whatever the world's initial reaction to a Soviet occupation of even part of West Germany, it seems unlikely that the West would get a second chance. It would take years to rebuild NATO's forces to the point where they could re-take West Germany after an initial defeat, and the pressures to dissolve the Alliance would be too great.

NATO's commitment to forward de-

NATO cannot use its total resource inputs to compensate for its inferiority in military outputs.

fense is not the result of a political bargain with West Germany, but rather the result of strategic realities that are just as vital to the rest of Europe and the United States. NATO stands or falls on its ability to preserve the Central Region.

This has its drawbacks and its advantages. It weakens NATO in a war fighting sense because it places a decisive military objective right at the border of Soviet-occupied states. The Soviet Union does not need to occupy Europe or even all of Germany, and it does not need to defeat NATO's armies in the sense of destroying them.

The USSR only has to move its forces 100-200km further west, and it will still be on the edge of victory. While the Federal Republic of Germany's industry is still heavily concentrated in the Ruhr, four of its seven major industrial complexes are near the Czech or inter-German border. These include the complexes around Hamburg, the Wolfsburg-Hannover axis, Nurnburg, and Munich.

Even if Soviet armor can only move 100km, it will control at least 30% of West Germany's population and 25% of its economy. If it can reach the

Rhine to the north, it will control at least 75% of West Germany's population and resources. NATO has no option for defense in depth. Its economy and its unity are on its front line in the Central Region.

THE LINKAGE BETWEEN THE CENTRAL REGION BALANCE AND NUCLEAR DETERRENCE

At the same time, the very importance of the Central Region strengthens NATO in terms of deterrence. It creates an "iron linkage" between the balance of armored forces in the Central Region and NATO theater and strategic nuclear capabilities. The USSR cannot consider the balance of forces in the Central Region without considering the risk that any attack on the Central Region will lead to nuclear conflict.

This linkage is the key uncertainty in the NATO-Warsaw Pact balance. The USSR cannot predict the point at which nuclear escalation will come, and the risk of such escalation increases in direct proportion to the forces the Warsaw Pact commits to an attack and its success.

Regardless of NATO's emphasis on conventional options, the USSR must still face the fact that NATO could be forced to nuclear war within hours of a Warsaw Pact attack. Nuclear escalation would be almost inevitable if NATO was caught by surprise and lost its main air bases and peacetime caserns before it could execute its dispersal plans. It could become equally inevitable in two or three days if the Warsaw Pact succeeded in creating a decisive breakthrough on the Central Front.

The very fact that so many of NATO's members are bound together in a common effort to defend West Germany at its eastern border and that the US is so heavily committed in terms of conventional and nuclear forces means there is little chance that a major Soviet invasion of West Germany could end with a conventional conflict.

This confronts the USSR with overwhelming odds that the failure of NATO's conventional defenses in Germany would trigger a nuclear war whose aftermath is certain in only one respect: the immense costs to both sides would be immensely more costly to the Soviet Union than any foreseeable benefits.

The Price of Nuclear Uncertainty

Once such escalation occurs, the balance of forces in the Central Region acquires a new and drastic meaning, one

the Balance of Uncertainty

which is largely measured by each side's willingness to escalate. Even weak NATO nuclear forces would still allow NATO to fight a nuclear conflict that will involve levels of damage and uncertainty that will transcend the "war fighting" capabilities of both NATO and the Warsaw Pact.

While it is theoretically possible that the USSR could win a nuclear conflict in Europe in the sense of defeating NATO forces, limiting damage to its own side to "acceptable" levels, and preserving enough of NATO's civilian population and economy to give an attack purpose, the possibility is not particularly great. Both sides would have to fight by extraordinarily well-constrained rules and fight without the slightest miscalculation.

It takes remarkably few ground bursts against urban targets, or with the proper fallout patterns, to trigger levels of damage that make a nuclear conflict in Europe seem almost uncontrollable.

It is no accident that in the vast pool of strategic literature developed in the West, there is virtually no serious unclassified analysis of the full effects of nuclear conflict on Western and Eastern Europe. It is also no accident that the war games of both sides either involve incredibly careful use of nuclear weapons or simply ignore their short and long term civil effects.

According to one simulation, nuclear surface strikes on NATO's main air bases and dispersal bases in Europe would kill about 30% of Europe's population within five years. Depending on wind and rain, additional strikes on NATO's major ports and buildup facilities would increase the figure to close to 50%. The cultural and economic cost would be as high or higher.

At the same time, NATO strikes on key military facilities in Poland and Czechoslovakia might well inflict enough casualties to ultimately destroy both nations' ethnic identity. The economies and populations of Eastern Europe are better dispersed but far more fragile and more dependent on the survival of a few highly centralized urban facilities.

Further, the USSR must consider its own vulnerabilities. Its territory is just as much a military target as Eastern Europe. It is true that NATO might not climb the ladder of escalation to that point, but the Soviet Union must consider that its very success in a nuclear and conventional conflict would tend to drive NATO to strike at steadily more sensitive targets. It must also consider the uncertain aftermath of even a "successful" war. The ability to occupy Europe is very different from a stable or survivable political and

economic victory.

The Uncertainty of Conventional Options

At the same time, NATO faces its own balance of uncertainty. It cannot afford to rely on the theater nuclear equivalent of minimum assured destruction. NATO must avoid nuclear conflict as long as possible and must avoid a level of conventional weakness that might allow the USSR to win a limited conventional war in Germany. NATO cannot rely on a hair trigger that presents so many risks that NATO may be unwilling to pull it.

NATO does, therefore, need a major conventional option or "battle fighting" capability. While winning an all-out conflict in Europe is beyond NATO's means and probably beyond a meaningful definition of "winning," NATO must be able to fight even theater-wide conflicts for a reasonable period of time. It must be able to impose conventional losses that fill the gap between inaction and

Murphy's law works on both sides of the Inter-German border.

willingness to use nuclear weapons.

NATO needs strong conventional forces for other reasons. NATO's unity is dependent on "flexible response." No democracy can sustain its support for NATO if it is asked to live constantly on the edge of nuclear war. Incidents happen and mistakes are made. NATO needs major conventional forces to avoid relying on bluff or facing the inevitable reality of crises and limited conflicts.

NATO cannot abandon hope or control with the first nuclear explosion. Conventional forces are essential to any meaningful battle fighting in nuclear conflict and to denying the Soviet Union the option of a nuclear first strike that could leave NATO with no option other than massive nuclear war or surrender.

While the West cannot guarantee that its social system will emerge intact from a large-scale nuclear conflict, it can be sure that everything it does to create an unbroken spectrum of risks from a border crossing to a strategic nuclear exchange will act to keep the peace and reduce the risk of escalation.

This creates another iron linkage: a linkage between NATO's having enough conventional forces to support its strategy of forward defense in West Germany and NATO's ability to avoid nuclear

conflict. Both the survival of the Alliance and the avoidance of nuclear war depend on the ability of NATO conventional forces to keep the Warsaw Pact from exploiting NATO's unwillingness to use nuclear weapons at limited levels of conflict and from occupying enough German territory to destroy Germany's economic and political viability.

Understanding the "Balance of Uncertainty"

It is these linkages between forward defense, the battle fighting capability of NATO's conventional forces in the Central Region, and the risk of escalation to unacceptable levels of nuclear conflict that make up the "balance of uncertainty." It is also these linkages which allow NATO to be a strong and purposeful alliance in spite of inferior forces and war fighting capability.

It is a cliché to say that NATO is a defensive alliance. Its defensive character is shaped by the politics of its member nations and by the size of the military forces democratic peoples will fund in peacetime. NATO will be attacked, not attack.

NATO is also, however, a deterrent alliance. It is designed to deter war rather than fight wars to some undefined form of military victory. NATO may have to fight major battles, but it relies on deterrence rather than the capability to win a general war.

NATO relies on conventional forces to deny the Warsaw Pact the ability to win a quick conventional victory in the forward area, and to make nuclear escalation seem a rational and inevitable response to any massive and sustained Soviet invasion. This reliance on deterrence rather than war fighting imposes risks, but it also means that NATO does not need forces equal to those of the Warsaw Pact or that can deal with "worst case" war fighting scenarios.

GIVING THE CENTRAL REGION DETERRENT CREDIBILITY

NATO's force improvement problem changes radically when its goal becomes deterrence and preserving the balance of uncertainty. It shifts from a problem of trying to close an impossible gap in conventional and/or nuclear capabilities to one of how best to maintain and strengthen an already effective deterrent.

This, however, still leaves the problem of determining what conventional capabilities are adequate. Even a deterrent alliance must back the balance of uncertainty in nuclear forces with a credible

balance of uncertainty in conventional capabilities. The question still remains as to whether NATO has, or can create, sufficient conventional forces to keep the peace in the Central Region.

The question of "how much is enough?" remains as valid as ever, and acceptance of NATO's role as a deterrent alliance presents new complications in assessing the balance. The problem becomes one of how to measure NATO's Central Region forces in terms of their relative ability to shape Soviet perceptions and deprive the USSR of any incentive to attack. Uncertainty becomes important as well as capability, and capability is defined in terms of deterring any Soviet armored assault on West Germany rather than fighting the resulting conflict.

Deterrence does not lend itself to a single set of answers. Many different combinations and levels of forces can provide a high degree of deterrence. This is one reason it has proved so tempting for NATO to set impossible goals for conventional forces or sustained conventional war fighting capability, even though there is no practical political chance that such forces will be provided. If the goals have been unachievable, they at least have been fixed and have put constant pressure on each member nation to provide more resources.

But it also helps explain why NATO has fallen into the trap of seeing the resulting gap between such goals and reality as evidence of its weakness. It explains why most assessments of the balance end up giving the impression that NATO lacks the ability to preserve the peace and in undermining the importance of the linkage between strong nuclear and conventional forces. It explains why NATO finds it so difficult to set force improvement priorities and to make trade-offs: where *everything* must be improved, no feasible set of force improvements seems to matter.

THE CENTRAL REGION "BEAN COUNT"

NATO is unique in its tendency to underestimate its strengths. The most commonly used numbers on the NATO and Warsaw Pact balance have nothing to do with the Central Region balance or with any other balance that has military or political meaning.

They ignore NATO's reliance on deterrence, they give a false impression of overall weakness, they fail to single out the trends and risks that matter, they fail to identify key uncertainties, and they fail to give NATO's force improvement opportunities proper credibility.

The Uncertain Value of Global "Horror Stories"

The key comparisons which emerge in

The Warsaw Pact must consider that the "peace-loving" peoples of Eastern Europe are scarcely the ideal mobilization base for offensive war.

NATO publications, in NATO and Warsaw Pact comparisons by the US Defense Department, and in the recent work of the International Institute of Strategic Studies (IISS) are "global" balances which lump together the forces in the Central Region with those on both flanks and then make arbitrary and/or undefined assumptions about what US and Soviet reinforcements should be included.

Such "balances" have no relevance to the forces each side could commit in an actual conflict. Yet they are the primary data provided to the Congress and to the public. NATO, for example, focused on broad force totals which were deliberately designed to dramatize its weakness when it published its first major public force comparisons in May of 1982.

NATO ignored comparative readiness, deployability, and buildup capabilities. It used geographic categories that made a bad balance impossible and which had nothing to do with either deterrent or war fighting capability.

The NATO land force "bean counts" included the flanks and excluded most units in the USSR and all NATO forces outside Europe. The resulting totals gave NATO 2.6 million men to 4.0 million for the Warsaw Pact.

The NATO-Pact ratios for other categories were 84-173 divisions, 13,000-42,500 tanks, 8,100-24,300 heavy anti-tank guided weapons launchers, 10,750-31,500 heavy mortars and artillery, 30,000-78,800 other armored vehicles, 400-700 attack helicopters, and 1,800-1,000 transport helicopters.

The NATO aircraft counts—which for some strange reason excluded all reinforcements from outside Europe but included all aircraft in Russia's three Western, Volga, and Urals Military Districts—gave the Pact 7,240 combat aircraft to 2,975 for NATO.

The NATO-Pact ratios were 2,288-

Even the most disciplined and careerist East European military leader cannot ignore the fact that what might be "limited escalation" for the Soviet Union could be "national suicide" for his own country.

2,115 fighter bomber or ground attack aircraft, 740-4,370 interceptors, 0-350 bombers, 4,200-11,000 antiaircraft guns, and 2,300-6,000 surface-to-air missile launchers.

These NATO air figures seem a bit thick even for comparisons designed to serve the purposes of political gamesmanship. They include most of the strategic defense forces of the Warsaw Pact—which almost certainly would not be committed in bulk to any attack on NATO even under the worst conditions—and ignore America's impressive ability to deploy tactical air power based in the US.

They ignore the fact that both sides would be short of air bases, air base protection, and support during the initial phases of any conflict. The issue is how many sorties can be supported in the forward area. Both sides have more aircraft than they can effectively deploy in the first 30 days of a conflict.

In broader terms, NATO's balances not only ignore NATO's peacekeeping and deterrent purposes; they are counterproductive. Their intended message is obviously that NATO should spend more on defense. Their practical message is one of hopelessness and that NATO force improvements do not matter.

The problem with "horror stories" is illustrated by the reaction of one Dutch Minister to a similar assessment of the balance in a SACEUR force goal briefing in the late 1960s: "Why does it matter if we lose decisively on D+12 rather than D+2?" While one may get away with crying wolf, announcing that the sky is falling presents unacceptable problems in credibility.

It is also interesting to contrast the force ratios that result from NATO's numbers with those developed by the IISS. The IISS figures are equally meaningless in lumping together the total forces of both alliances, but they do include all the forces in NATO countries and US reinforcements and provide a meaningful range of buildup assumptions.

Even a few examples of the differences between the NATO and IISS force ratios by category illustrate how damaging the gamesmanship in NATO's figures is to an understanding of the Alliance's strengths. NATO gives the Warsaw Pact a superiority in medium tanks of 3.3-1; the IISS estimates the superiority at 1.55-2.64. NATO's estimate of artillery superiority is 2.9-1; the IISS estimate is 1.05-2.07.

NATO's "horror story" does, however, follow a great tradition. Virtually all of the NATO-Pact comparisons issued in the Secretary of Defense's *Annual Report* and the JCS annual *Military Posture* statement compare the total forces of all NATO and Warsaw Pact countries. They differ from NATO's figures largely in further exaggerating the

Table One
The Central Region Balance in June, 1983

	NATO			Warsaw Pact			NATO Standing
	US ¹	Other NATO ²	Total	USSR ¹	Other Warsaw Pact	Total	
Personnel ³	282,000	743,650	1,025,650	535,000	715,000	1,250,000	-224,350
Divisions							
Committed⁴							
Armor	2½	13	15	13	12	25	-10
Other	2½	8	10½	13	19	32	-21½
Total	5	21	26	26	31	57	-31
Ready							
Reinforcements⁵							
Armor	1½	5	6½	4	0	4	+2½
Other	11½	11	22½	4	0	4	+18½
Total	13	16	29	8	0	8	+21
Sub-Total	18	37	55	34	31	65	-10
First-Line Reserves⁶							
Armor	2	0	2	12	0	12	-10
Other	8	0	8	12	0	12	-4
Total	10	0	10	24	0	24	-14
Total Divisions	28	37	65	58	21	89	-24
Medium Tanks⁷							
Deployed	2,000	6,905	8,905	18,000	7,000	25,000	-16,095
POMCUS	1,000	0	1,000	0	0	0	+1,000
Total	3,000	6,905	9,905	18,000	7,000	25,000	-15,095
Tactical Aircraft⁸							
Bombers	144	16	160	0	0	0	+160
Fighter/Attack	336	1,370	1,706	530	1,000	1,530	+176
Interceptors	90	560	650	350	1,225	1,575	-925
Total	570	1,946	2,516	880	2,225	3,105	-589
MRBM/IRBM ⁹	0	18	18	525	0	525	-507

¹US personnel strengths are active Army and Air Force only. The Soviet side includes Category III divisions at current strengths. Soviet personnel total 410,000 in East Germany, 50,000 in Poland, and 75,000 in Czechoslovakia.

²French Army and Air Force totals are included in all categories, even though those forces are not under NATO control and only three divisions are deployed in Germany. Danish and German forces in the Schleswig-Holstein Province on the base of the Jutland Peninsula are technically a part of NATO's north flank, but are counted in the center sector for purposes of this comparison.

³NATO personnel strengths are active forces only. They include 282,000 Americans, 83,500 Belgians, 5,400 Canadians, 50,000 French, 426,000 Germans (excluding forces with AFNORTH), 700 Luxembourgers, 92,100 from the Netherlands, 65,100 British, and 20,850 Danes, a total of 1,025,650. Warsaw Pact includes Cat III divisions at current strengths. The total reflects 535,000 Soviet forces, 150,300 East Germans, 364,000 Poles, and 200,000 Czechs.

⁴Committed NATO divisions are those in West Germany. All US divisions are Army. Three CONUS-based Reforger divisions have one brigade each forward-deployed in Germany. Warsaw Pact divisions are those in East Germany, Czechoslovakia and Poland. All are Cat I. Division equivalents are excluded.

⁵US Ready Reinforcements do not conform to current contingency plans. They reflect what could be committed quickly, rather than what necessarily would: eight full Army, parts of two Reforger divisions (that show as ½ and ¾ respectively) and two Marine Amphibious Force (MAF) division/wing teams. NATO Ready Reinforcements are six French, two Belgian, and three Dutch divisions. Soviet lists are restricted to Cat I and II divisions in the Baltic, Belorussian, and Carpathian Military Districts.

⁶First Line Reserves do not conform to current contingency plans, which contemplate withholding two or more divisions initially, including the light 82d Airborne. Instead, they reflect reinforcement by all forces in CONUS and CINCPAC's Army reserve to show the best possible US case: eight Army Reserve Component divisions and two MAFs (one active, one reserve). Soviet forces are Cat III divisions in the Baltic, Belorussian, and Carpathian Military Districts.

⁷The United States has replaced all Sheridan light tanks with M-60 mediums. The number of Soviet reserve stock tanks is not ascertainable.

⁸Aircraft statistics exclude US dual-based forces in CONUS. F-111s count as medium bombers. US aircraft in Great Britain and Spain show.

⁹US Pershing I missiles are Short Range Ballistic Missiles (SRBMs with a maximum range of about 400 miles), so do not count. The 18 "NATO" MRBMs/IRBMs are French. About one-third of Soviet MRBMs/IRBMs are in European Russia. Another third in Western Siberia could cover European targets on call.

SOURCE: John Collins, Congressional Research Service.

balance in favor of the Pact by including all the reserves on both sides.

Such counts again have no relation to any militarily credible contingency, and again are designed to use the worst possible balance to get the best possible budget. Their defect is again that the resulting balances have credibility only where such credibility is least desirable. Con-

gress has learned to ignore them, but the public is given the impression of weakness bordering on the risk of war.

The Uncertainty of the Central Region Balance

The situation is little better when one compares most counts of the Central Re-

gion balance. The comparisons in Table One are almost unique in summarizing the force totals on each side in ways which explicitly define the forces that are counted and show the range of build-up capabilities on both sides.

They reveal obvious and massive limitations in NATO's ability to fight a general war in the Central Region. At the

same time, they are considerably more reassuring than the "global comparisons" just discussed. While NATO is clearly inferior to the Warsaw Pact, it still has an impressive level of deterrent capability.¹

Table One shows that NATO does not face a massive Warsaw Pact superiority in manpower. It shows that NATO has significant M-Day and ready reserve forces, and it shows that NATO's inferiority in tanks is partly offset by a far smaller inferiority in aircraft. Unlike many counts of the Central Region balance, it treats Britain, Denmark, France, and the United States as full members of the NATO Alliance and counts all the forces they would deploy in an all-out war.

Above all, Table One begins to give a tangible feeling for the uncertainties which affect any analysis of the Central Region balance and which the Soviet Union must weigh in considering its capability to attack West Germany.

The Uncertainty of Central Region Force Counts

These uncertainties are further illustrated in Table Two, which compares the leading official and semiofficial counts of the Central Region balance. Even allowing for differences in date and definition, it is obvious that there are many different ways to count the balance and many different ways to look at even the simplest data on NATO and Warsaw Pact forces.

These differences do not, however, illustrate the key trends that shape the balance of uncertainty. Most of the balances in Table Two share the same problems as the "global" balances just discussed. They have been structured to emphasize NATO's weakness to support the case for the largest possible budget or force goals.

While the full range of differences involved cannot be illustrated without comparing the supporting text, NATO's estimates emerge with the most pessimistic view of the balance. West Germany

¹The best comparison of both sides remains Robert Lucas Fisher's *Defending the Central Front: The Balance of Forces*, Adelphi Paper 127, IISS, London. It was published in August 1976, however, and is now seriously dated. John Erickson and David C. Ishby have provided numerous studies of Soviet buildup capabilities and attack capabilities, and Ishby's *Weapons and Tactics of the Soviet Army* is perhaps the best available assessment of the strengths and weaknesses of current Soviet forces. Neither Erickson nor Ishby, however, has attempted "net assessments." John Collins has done excellent work in comparing US and Soviet forces but has not addressed NATO and Pact capabilities in full depth. Phillip Karber has done excellent work on tracing the development of the NATO/Warsaw Pact arms race but has not assessed many aspects of readiness and buildup capability.

Table Two
The First Balance of Uncertainty:
NATO and Warsaw Pact Forces
in the Central Region

Category	CRS Estimate ^a	NATO Estimate ^b	UK Estimate ^c	IISS Estimate ^d	FRG Estimate ^e
Total Soldiers					
NATO	1,025,650	n.a.	780,000	n.a.	n.a.
Warsaw Pact	1,250,000	n.a.	950,000	n.a.	n.a.
Soldiers in Fighting Units					
NATO	n.a.	n.a.	580,000	n.a.	n.a.
Warsaw Pact	n.a.	n.a.	720,000	n.a.	n.a.
Total Division Equivalents					
NATO	65	35	n.a.	57½	28-43
Warsaw Pact	89	95	n.a.	101?	58-68
Division Equivalents Before Mobilization					
NATO	26	n.a.	n.a.	27	28
Warsaw Pact	57	n.a.	n.a.	46	58
Main Battle Tanks					
NATO	9,905	7,600	7,500	7,000	6,500-7,500
Warsaw Pact	25,000	25,500	17,500	19,500	19,000-21,700
Artillery/Mortars					
NATO	n.a.	4,050	2,700	n.a.	n.a.
Warsaw Pact	n.a.	17,500	7,500	n.a.	n.a.
Total Fixed Wing Combat Aircraft					
NATO	2,516	1,985	1,250	2,251	1,750-2,230
Warsaw Pact	3,105	4,590	2,700	3,950	2,800-3,180
Fighter Bombers					
NATO	1,866	1,340	n.a.	1,602	n.a.
Warsaw Pact	1,530	1,580	n.a.	1,350	n.a.
Interceptors					
NATO	650	445	n.a.	386	n.a.
Warsaw Pact	1,575	2,595	n.a.	2,050	n.a.
Recce Aircraft					
NATO	n.a.	200	n.a.	263	n.a.
Warsaw Pact	n.a.	415	n.a.	550	n.a.

^aSee Table One for definitions and forces counted.

^bSee NATO and Warsaw Pact Force Comparisons, May, 1982 *AFJ*, Figure 6. NATO never defines what it includes in the Central Region, but seems to exclude all French forces, to count only NATO committed land forces now stationed in the FRG and Benelux, to count all Warsaw Pact forces and equipment holdings stocks in East Germany (GDR), Poland, Czechoslovakia, and in Russia's three Western Military Districts. The NATO count adds the UK for air forces but excludes France and all US reinforcements. It counts all Soviet aircraft in the Western Military Districts including strategic defense aircraft.

^cBritish *Defense White Paper*, Volume One, 1982. Counts only French forces in Germany. The term "Central Front" used in the British estimate is otherwise never defined. It seems to compare all Pact forces in the GDR, Poland, and Czechoslovakia against those in NATO-committed M-Day forces in the FRG, Benelux, and UK.

^dThese estimates are taken from the 1980-81 IISS *Military Balance*, and are somewhat peculiar in that they lump together the forces in and opposing Norway with those in the Central Region. They do, however, include France. The IISS counts of the conventional military balance in the 1981-82 and 1982-83 editions of the *Military Balance* are useless because they only provide data for the entire Warsaw Pact—although they break out US, Northern and Central European, and Southern European forces. The result is militarily meaningless.

^eFRG *White Paper on Defense*, 1979. The FRG is the only major source of estimates which properly defines what it counts. The low end of the range includes all NATO and Pact forces in the FRG and Benelux versus forces in the GDR, Czechoslovakia, and Poland. The high end adds all forces in France and Hungary.

and the United Kingdom are only marginally better, although they seem to be counting different alliances, particularly in the case of aircraft. The IISS count is somewhat better but again does not track in detail with the other counts, even allowing for the fact that it is somewhat dated.

Admittedly, even the best numbers could only provide limited insight into the actual military capabilities of NATO and the Warsaw Pact. Even the most purposeful estimate of the peacetime military strength of opposing forces must select some set of figures and exclude other possible contingencies.

Counts which define ranges based on alternative geographic regions and build-ups must ignore many critical factors like readiness, training, leadership, morale, tactics and strategy—and luck. There also is no reliable way to weight weapons, unit, and manpower numbers to make them equivalent.

Nevertheless, the problems in most of the balances summarized in Table Two go beyond excusable limits; yet such force comparisons matter. They shape the West's perception of the balance. Further, deterrence differs fundamentally from war in that "victory" is determined by perceptions of relative strength. Finally, comparisons like those in Table Two have played a key role in shaping the current perception of NATO's weakness in the West.

They may even have undermined the credibility of deterrence from a Soviet perspective. While Soviet perceptions undoubtedly involve sophisticated intelligence, war gaming, and analysis, it seems likely that they are still influenced by such "bean counts" if only because the other factors shaping the balance are so complex and uncertain. Further, Soviet perceptions are undoubtedly as concerned with political factors as military ones, and the USSR is fully ready to exploit every sign of internal division and weakness in the West.

The Uncertainties Posed by NATO's Resources and Unity

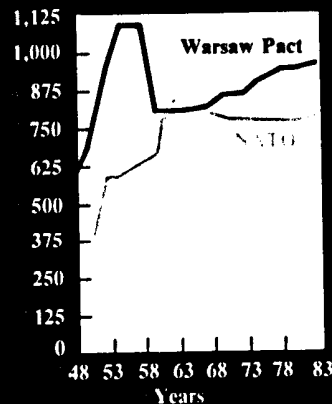
Fortunately, a broad survey of the main trends and uncertainties in the Central Region balance indicates that NATO is far stronger than the balances in Table Two indicate. It also illustrates the fact that NATO can focus on selected force improvements and that these areas of force improvement closely parallel those set by SACEUR, recent US Army and Air Force studies, and European-American studies like the European Security Study Group's report on *Strengthening Conventional Deterrence in Europe (ICSS)*.

Table Three helps illustrate some of these uncertainties. It is drawn from work by Phillip Karber and others at the BDM Corporation which has traced the

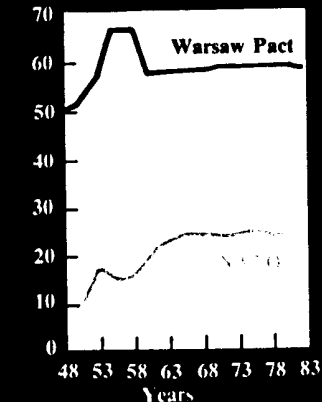
Table Three
Central Region Force Trends: Army Manpower and Division Equivalent Forces Stationed in Benelux, FRG, GDR, Czechoslovakia, and Poland

Comparative Manpower and Divisions

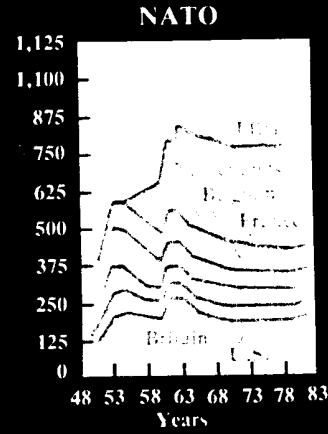
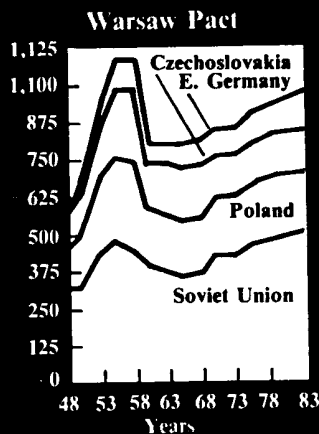
Total Manpower (Thousands)



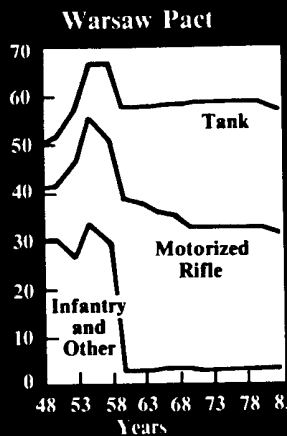
Total Division Equivalents^a



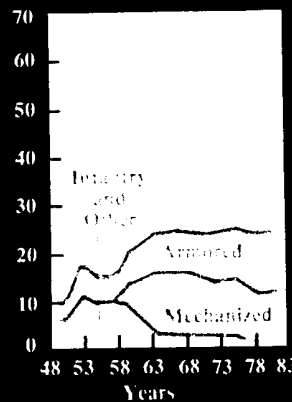
Army Manpower by Country



Divisions by Type



NATO (3 Brigades = 1 Division)



Source: Adapted by the author from work by Phillip A. Karber of the BDM Corporation. Updates are based on the IISS *Military Balance* and Congressional Research Service working data.

^aNo agreement exists over the count of "division equivalents" in NATO.

trends in the Central Region balance since the founding of the NATO Alliance.² While such work tends to underestimate NATO (because it excludes NATO forces in France and the UK and rapid reinforcements from the US), it provides a better basis for understanding NATO's strengths and opportunities than any material issued by the Department of Defense and most of the other sources listed in Table Two.

The Uncertainty of Resources

The first section of Table Three illustrates an uncertainty which receives far too little attention and which tends to favor NATO. This is the uncertainty of resources.

NATO and the Warsaw Pact differ sharply in how they organize military forces. The Warsaw Pact concentrates far more of its resources on combat units and aircraft which would be rapidly consumed in combat and then replaced with new units. NATO emphasizes sustaining capability: keeping combat units intact and providing large amounts of supply, manpower, and equipment replacements.

It is possible to argue endlessly over whether NATO should, in fact, copy the Warsaw Pact and make similar increases in its number of combat arms units at the cost of support and sustaining capability. At the same time, the Soviet Union cannot ignore the fact that its advantage in divisions (shown in the first part of Table Three) is in no way matched by its lead in manpower.

In fact, if one allows for the fact that the estimate of Warsaw Pact manpower is ultimately drawn from intelligence sources that are highly uncertain, it is almost certain that the estimate of Warsaw Pact manpower is 30,000-70,000 men—or 5% to 10%—too high.

Not only are many individual Warsaw Pact combat units below the nominal strength levels which NATO estimates for their general category of readiness, there is good reason to doubt whether even the Soviet forces in East Germany (GDR, or German Democratic Republic)—the most combat ready forces in the entire Warsaw Pact—have the manpower in support units that is reflected in the totals in Table Three.

Further, Table Three excludes 256,000 men in the French army in France, at least 70,000 British soldiers in Britain, and a small number of US Army personnel. As a result, the true NATO-Pact manpower ratio in the Central Region is not 787,000 to 963,000 but more like 1:113 million to between 890,000 and 933,000.

The Warsaw Pact also faces a massive uncertainty in terms of resources. In spite of its impressive advantage in divi-

sions and many categories of combat equipment, it has only parity or inferiority in manpower normally deployed in the Central Region.

The Warsaw Pact also faces an uncertainty in terms of military budgets. There is no easy way to price Warsaw Pact forces in dollar terms or measure what the US and USSR are spending on the Central Region. Almost all experts agree, however, that NATO is collectively spending more in comparable dollar terms on conventional forces in the Central Region than the Warsaw Pact.³

NATO does not benefit from much of its expenditure in comparative combat strength because they go to higher living standards or pay and allowances. The Warsaw Pact spends more on military procurement than NATO and substantially more on buying major weapons.

NATO, however, spends more than the Pact on some aspects of military capability, like individual major weapons, aircraft, logistics, and support facilities and equipment. It seems to be spending far more on areas like advanced military technology—particularly in the area of sensors and C/I (command, control, communications, and intelligence).

NATO's resource problem is comparatively small in absolute terms. NATO has probably consistently provided more manpower and budgetary resources for the Central Region than the Warsaw Pact. NATO's problem is rather the lack of ability to allocate its resources with the same disregard for the human needs of its military and for the differing political and economic needs of its member nations.

There is no practical hope that NATO can magically restructure the efforts of sovereign and democratic nations so as to use their resources with ruthless efficiency. NATO cannot use its total resource inputs to compensate for its inferiority in military outputs.

At the same time, the Warsaw Pact cannot ignore the fact that NATO is allocating far more resources to aspects of military capability which cannot be quantified in any comparison of the balance. Further, the resource trends shown in Table Three argue that NATO can make far more effective use of its resources if it focuses on making at least

³Numerous expenditure curves are available on total NATO and Warsaw Pact defense spending and show everything from a slight Pact lead to a NATO lead. These comparisons are militarily meaningless, however, because they include total US and Soviet military expenditures and lump the tanks together with the Central Region. The data on Central Region expenditures consist almost solely of "working estimates." The Department of Defense has never really been able to agree on how it should count its expenditures on Central Region forces, and CIA and DIA have never been able to agree on how to cost relevant Soviet forces.

limited trade-offs rather than seeking larger budgets.

The Uncertainty of Nations

The second part of Table Three raises equal or greater uncertainties. Roughly half of the Warsaw Pact's peacetime manpower and one-third of its mobilized manpower is East European. The GDR has 113,000 men, Czechoslovakia has 142,500, and Poland has 207,000. All are conscript armies. All must virtually double their size with reserve civilians to mobilize all the combat and reserve divisions shown at the top of Table Three, plus their necessary support.

While counts differ according to source, recent Congressional Research Service (CRS) reporting indicates that there are 57 divisions in the Warsaw Pact forces in the forward area, and 31 of them are non-Soviet. But 11 of the 31 non-Soviet divisions in the forward area are reserve units, and most of the support forces required for an attack must use reserve manpower.

NATO cannot count on East European reluctance to fully support the USSR in estimating its relative war fighting capability—but the USSR can scarcely count upon those "allies" to provide such support. This is significant when one considers that 15 of the 57-odd divisions in Pact forces are Polish and 10 are Czech. Only nine or 10 of the Polish divisions and five of the Czech divisions are combat ready. The GDR is the only East European state which relies solely on combat ready units where the officers and NCOs are carefully selected in ways which seem likely to provide a high standard of real loyalty.

The Warsaw Pact must consider that the "peace-loving" peoples of Eastern Europe are scarcely the ideal mobilization base for offensive war. It must consider that 3,060 of the tanks and 705 of the combat aircraft shown in Tables One and Two are Polish, and 3,400 tanks and 471 combat aircraft are Czech.

Further, even the most disciplined and careerist East European military leader cannot ignore the fact that what might be "limited escalation" for the Soviet Union could be "national suicide" for his own country. He may find it equally difficult to ignore the very public emphasis the USSR puts on limiting NATO's ability to strike at the USSR and the implied message that no such constraints might exist on strikes against East Europe in a theater nuclear conflict. The risk of escalation will act to increase the USSR's uncertainty about the role of its allies as conflicts grow more intense.

The Uncertainty of NATO's Cohesion

The final key uncertainty revealed in

²Phillip A. Karber, unpublished draft manuscript, "The Conventional Arms Competition in Central Europe: 1950-1980," June 1981.

Table Three has two major aspects. The first is that any attack on the FRG and Central Region involves the major nations of the Alliance.

The US has over 210,000 soldiers in the FRG and 256,000 soldiers and airmen in the Central Region. It has also steadily increased its commitment to forward defense. It had 210,381 military personnel in Germany in 1972, 224,466 in 1977, and 256,391 in 1982. It has hundreds of thousands of civilians on West German territory and hundreds of billions of dollars' worth of economic ties.

The UK has 55,000 men and most of its modern equipment on the front line. Belgium, France, and the Netherlands commit key elements of their forces. It takes a considerable act of faith, one bordering on the incredible, to assume that any massive Soviet attack on these forces can end without a global or nuclear conflict.

At the same time, the manpower trends by NATO country track with other trends in NATO forces. For all the arguments about burden sharing, the Alliance's commitment to forward defense of the Central Region has been remarkably consistent. NATO has made remarkably few cuts in its combat strength in the forward areas of the Central Region since the foundation of the Alliance.

The figures for divisions by type also show that NATO has maintained its strength and completed its modernization to armored forces. These trends are particularly important when one realizes that the conversion to armor occurred during 1958-64, which was also the period in which the European nations had to fund their own major equipment purchases for the first time since 1945.

The very cohesion of NATO forces in the Central Region is itself a powerful deterrent uncertainty. For all the talk of a crisis in US and European relations—and it is worth noting that this talk has continued for more than a quarter of a century—NATO has a basic military unity which makes any attack on West Germany an attack on NATO and which casts serious doubt on Russia's ability to exploit any short term political divisions among NATO countries. NATO may not be a perfectly integrated alliance, but in the words of Robert Osgood, it has proved incredibly entangling.

The Uncertainty Posed by Differences in Readiness and Buildup Capability

The uncertainties imposed by the Warsaw Pact's reliance on East European forces are compounded by those that grow out of the differences between NATO and Warsaw Pact readiness and buildup requirements. These differences are massive and impose certain risks.

Table Four
NATO Divisions
Detailed Breakout, Central Region
as of January 1, 1983

	NATO Divisions			Separate Brigades or Regiments
	Armor	Other	Total	
Committed Divisions in West Germany from:				
Belgium	0	1	1	0
Britain	4	0	4	1
Canada	0	0	0	1
France ¹	3	0	3	0
Netherlands	0	2	2	0
US ²	2½	2½	5	3
West Germany ³	6	5	11	3
Total	15½	10½	26	8
Ready Reinforcements				
Belgium	0	1	1	0
Britain	0	0	0	1
Denmark ³	0	1	1	2
France ¹	5	8	13	0
Netherlands	0	1	1	1
US ²	1½	11½	13	3
Total	6½	22½	29	7
First-Line Reserves				
Netherlands	0	0	0	2
US ²	2	8	10	18
Belgium	0	0	0	2
Britain	0	0	0	2
Grand Total	24	41	65	39

¹French Army and Air Force totals are included in all categories, although they are not under NATO control.

²US brigades/regiments include the Berlin Brigade and two armored cavalry regiments (ACRs). Ready reinforcements are two active brigades and one ACR in CONUS. First-line reserves are 14 reserve component brigades and four ACRs. (Four separate brigades join active divisions under the "round out" program. Two replace school troops at Fort Benning and Fort Knox. Brigades in Alaska and Panama stand fast.)

³Danish and German forces in the Schleswig-Holstein Province on the base of the Jutland Peninsula are technically a part of NATO's north flank, but are counted in the center sector for purposes of this comparison.

SOURCE: John M. Collins, Congressional Research Service.

The Uncertainty of Readiness

Table Four illustrates these differences. It shows the complex mix of committed, ready reinforcement, and first line reserve units in each NATO nation in the Central Region. It also shows that virtually all of the NATO divisions compared in Table Three are combat ready or M-Day units.

These NATO units admittedly differ in readiness in many obvious or subtle ways. Different countries impose very different standards in terms of training, ammunition stocks, war reserve equipment, combat and service support, spare parts, unit integrity and turnover, combined arms and land/air training, and a host of other factors.

The FRG, for example, still has a weakly organized reserve system which

does not assign men to specific combat units in peacetime. It is also heavily dependent on reserves to expand its combat divisions in wartime and to fill key support units. (Some artillery units have only one-third of their wartime manning requirements in peacetime.) The Dutch assign reserves to specific units but have sharply cut their force structure and support capabilities. The British also assign reserves to specific equipments, but their reserves are grossly short of heavy weapons and anti-armor capability.

There is no easy way to summarize these differences. No meaningful net assessment has ever been made of the comparative readiness of each NATO army. NATO can only go so far in raising such sensitive issues and must concentrate on the extent to which each nation meets agreed standards and its own national goals.

The US almost deliberately avoids direct investigation of the readiness of its allies—this borders too close to spying on its friends. While it has conducted intense debates over Warsaw Pact build-up capability since the early 1960s, it has never conducted the kind of country-by-country or unit-by-unit analysis needed to evaluate NATO.

At the same time, enough is known to say that the 26 committed divisions and eight independent committed regiments and brigades in Table Four are generally ready to fight within one to two days of preparation, are heavily equipped with armor and other weapons, and share a common structure and level of readiness at least to the point that they are ready to provide the battle fighting capability that is the essential buffer between deterrence and reliance on immediate nuclear war.

In contrast, most of the remaining 39 divisions and 31 brigades in NATO's Central Region forces are far less well equipped, far less well armed, and have far more uncertain training levels and ability to be committed to combat. There are excellent reserve, national command, and rapid reinforcement units in NATO, but the bulk are either much lower in quality or will take far longer to arrive than the committed or M-Day units.

This is one reason that NATO military commanders place so much emphasis on combat ready vs. reserve units and on the weaknesses they can identify within the political constraints imposed by national sensitivities. Combat ready units are not only the primary means of ensuring that NATO can implement a forward strategy in the face of an inability to be certain of more than 48 hours' warning; they are the only means of allowing NATO to keep up a broad pressure for combat effectiveness.

It is also a reason why there is so much criticism of NATO's readiness and so much emphasis on being able to fight. Civilians may prefer technology or impressive "bean counts" to ammunition and training; NATO officers do not.

Table Five, however, shows that for all the uncertainties about NATO readiness, such uncertainties in the Warsaw Pact are even greater. While all of the NATO divisions shown in Table Three are more or less combat ready, 11 of the 57 Warsaw Pact divisions are Category II and III reserve units. Further, all of the 32 Soviet divisions in the Western Military District are Category II or III divisions, and between 30–60% of the Pact's non-combat support manpower would have to be mobilized.

The Soviet Union must evaluate its own strength in light of the fact that its own significant combat experience since 1945 has been in Afghanistan and that it no longer has any significant number of combat-trained troops. Quite aside from the issue of the reliability of non-Soviet

Table Five

Warsaw Pact Divisions, Central Region

Divisions	Total	Category		
		I	II	III
<u>In Czechoslovakia</u>				
Czech				
Tank	5	1	2	2
Motorized Rifle	5	3	1	1
Total	10	4	3	3
Soviet				
Tank	2	2	0	0
Motorized Rifle	3	3	0	0
Total	5	5	0	0
Grand Total	15	9	3	3
<u>In East Germany</u>				
East German				
Tank	2	2	0	0
Motorized Rifle	4	4	0	0
Total	6	6	0	0
Soviet				
Tank	9	9	0	0
Motorized Rifle	10	10	0	0
Total	19	19	0	0
Grand Total	25	25	0	0
<u>In Poland</u>				
Polish				
Tank	5	5	0	0
Motorized Rifle	8	3	2	3
Other	2	2	0	0
Total	15	10	2	3
Soviet				
Tank	2	2	0	0
Motorized Rifle	0	0	0	0
Total	2	2	0	0
Grand Total	17	12	2	3
<u>Total Committed</u>				
Non-Soviet				
Tank	12	8	2	2
Motorized Rifle	17	10	3	4
Other	2	2	0	0
Total	31	20	5	6
Soviet				
Tank	13	13	0	0
Motorized Rifle	13	13	0	0
Total	26	26	0	0
Grand Total	57	46	5	6
<u>In Western Russia</u>				
Ready Reinforcement (all Soviet)	4	0	4	0
	4	0	4	0
	8	0	8	0
First-Line Reserves (all Soviet)	12	0	0	12
	12	0	0	12
	24	0	0	24
Grand Total	89	46	13	30

SOURCE: John Collins, Congressional Research Service.

reserve forces, it also faces the issue of how well its Category II and III units can deploy and fight in a theater-wide conflict.

The readiness of these reserve forces is now the subject of considerable controversy within NATO, and intelligence experts do not agree on how to define or allocate Category I, II, and III classifications. The term Category I seems to have different meaning for Soviet units in Eastern Europe and in the USSR. The Soviet units in the GDR and Europe seem to average 95% manning, while units in the USSR may range down to 85%. Even when manning is high or even overstrength, this seems to mean a unit has a special training role and may actually be unusually short of combat ready manpower.

The USSR has built up its Category II divisions to the point where these are now fully equipped—there have been incredible increases in the amount of combat equipment in all types of Soviet reserve units over the last decade—but their manning is only 50–85% of wartime needs, and training and readiness is much lower than in the first line Soviet units in Europe.

East European Category II units are generally still short some items of military equipment and have only 50–75% of their wartime manpower. Their training is generally considerably lower than in Soviet Category I units.

Soviet Category III units can range from near cadre strength to 35% of manning and now have most of their combat equipment. Again, the USSR's vast output of military equipment is allowing it to correct most of its past reserve shortages. East European Category III units, however, are still short combat and extensive amounts of support equipment and rarely have more than 15–30% of their manpower.

NATO intelligence estimates have tended to ignore these readiness problems in calculating the threat, as well as the fact that Warsaw Pact divisions of all types are constantly undergoing massive equipment conversions, and are subject to large-scale manpower turbulence because of a reliance on two-year conscripts, almost all of whom must also receive basic training in the unit to which they are sent.

It is difficult, however, to see how the Soviet Union can view the situation in similar terms. The USSR is anything but reckless in military matters, and its readiness assessments are nearly certain to be ultraconservative. It will know the weakness of each Warsaw Pact unit as well as SACEUR comes to know privately the weakness of each NATO unit under his command. Its calculation of the risks of committing understrength and rapidly mobilized units will give it a very different picture of total buildup capabilities than the one common in NATO.

The USSR also cannot covertly mobilize more than a few units in the USSR and can only really determine the combat capability of Soviet and non-Soviet Category II and Category III units by observing them in combat. It faces the added uncertainty that World War II and Afghanistan provide little tangible basis for assessing its own combat power.

This balance of uncertainty again tends to favor NATO in some important ways. NATO's best forces are concentrated where they should be: in positions to immediately support the forward defense of Germany, and this includes virtually all of the forces counted in most of the pessimistic estimates shown in Table Two. At least one-fifth of the Warsaw Pact strength counted in the various estimates in Table Two (a minimum of 3,500 tanks' worth) is in forces which are considerably less ready than most NATO units counted in the same comparisons.

The Uncertainty of Buildup Capability

The resulting uncertainties in buildup capability are difficult to estimate and illustrate the fact that NATO runs massive risks as well as the Warsaw Pact.

Table Six, for example, shows how critical the uncertainty surrounding the readiness of Warsaw Pact divisions can be. The estimates in Table Six are taken from unclassified work by Col. Daniel Gans in *Military Review*⁴ but rely on hitherto classified intelligence data. They provide a good picture of the kind of buildup model used in most NATO planning.

At the same time, they show how critical the readiness issue can be. Table Six assumes that four motorized rifle and 10 tank divisions in the western and northern USSR are sufficiently ready so that they can be deployed against the Central Region between M+10 and M+14. Some NATO experts believe they could arrive as early as D+4 to D+7. Others believe, however, that they could only be deployed in fully combat ready form by D+30 to D+40. A few believe that the USSR would be forced to draw on more ready units in military districts further from the inter-German border.

Even more disagreement exists over the arrival or combat readiness of most

⁴See Col. Daniel Gans, USAR-Ret., "Fight Outnumbered and Win," *Military Review*, Vols. LX and LXI. Gans' estimate of the total threat to the Central Region includes three Category I divisions in the Belorussian, Carpathian, and Baltic Military Districts, plus nine divisions in the Moscow Military District, one in the Leningrad Military District, and one in the Kiev Military District. Gans also adds four divisions in Hungary that arrive by M+8. He counts seven Polish Category I divisions vs. 10 for the CRS and five Czech Category I divisions vs. four for the CRS.

Warsaw Pact Category II and III divisions. Table Six presents the view of many US experts in delaying the arrival of Category II units for nearly a month after M-Day and the arrival of Category III divisions until M+130. Other US and most European experts feel differently. They feel that the USSR would rely on mass and ignore problems in training and the ability to fight as a cohesive unit. They credit Category II units with almost immediate combat capability once they fully mobilize—something that requires 48–96 hours.

NATO estimates of the availability of Category III units is based on hard-won political compromises among intelligence experts. Depending on the source, Category III units are credited with the ability to achieve readiness in no more than several weeks and often within one week.

The resolution of this uncertainty is critical. If the more pessimistic estimates are right, the Warsaw Pact's emphasis on armor and weapons numbers will allow it to bring massive firepower and maneuver capability to bear within days of the beginning of mobilization. Further, the threat will grow steadily worse. The Pact's massive lead in military production has already allowed it, for instance, to increase total tank strength in the Western Military District by nearly NATO's total tank strength in the Central Region in just the last five years. At current rates, all Warsaw Pact divisions—except the weakest cadre units—will be fully equipped by the mid-1980s.

In contrast, most of NATO's reserve units lack the heavy armor to fight Warsaw Pact divisions. There is no debate over the NATO buildup ratios in Table Six, which are optimal estimates for NATO. Even full deployment of the best NATO units will not change them.

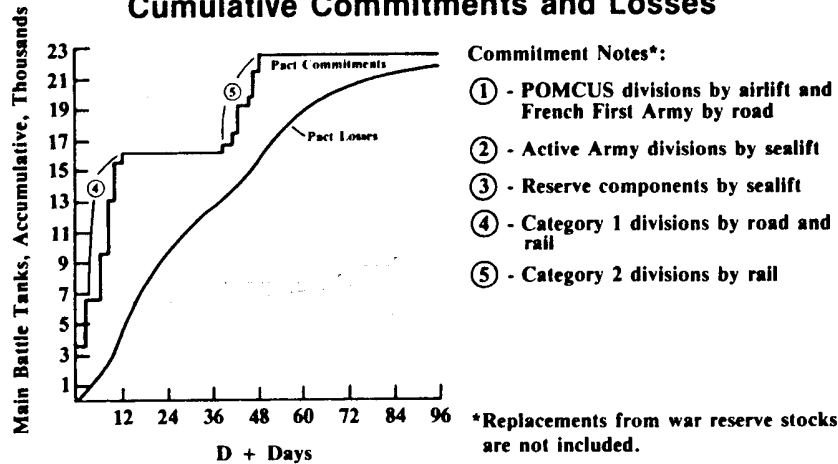
The US Army reinforcing units whose equipment is pre-positioned in Europe—3rd Armored Cavalry Regiment to arrive by D+9, 3rd Armored Division at D+10, and 1st and 4th Mechanized Divisions at D+11—and Dutch M-Day and Rim units in the Netherlands, plus the remainder of the French First Army cannot significantly alter the immense superiority in weapons numbers which the Pact can deploy by rail and road.

Most British reserves are not equipped to fight Warsaw Pact armor, and the US cannot deploy additional armored units from the US in much less than 32 days or deploy its reserve units in less than 70 days—and these are NATO's only other major armored reserves.

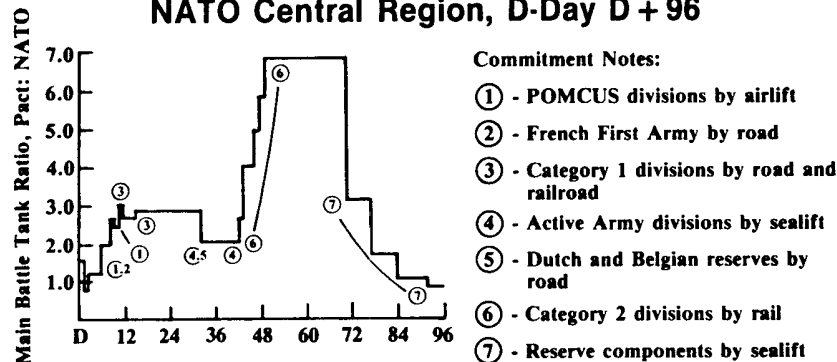
It is also important to note that the Warsaw Pact will begin any buildup with the elements of four offensive fronts already deployed in Europe: one in the GDR, one in Poland to cover the northern front, another at Tabor in Czechoslovakia, and a fourth to cover the Danube Corridor.

Table Six The Build-Up Problem: Illustrative Estimates of the Impact of Warsaw Pact Armored Unit Deployments

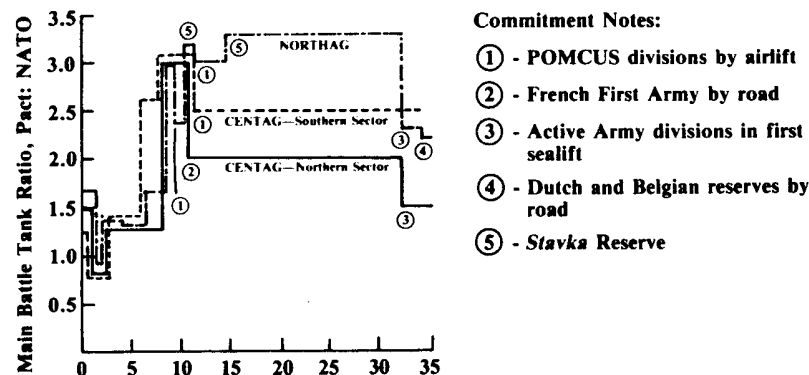
Main Battle Tanks in NATO Central Region Cumulative Commitments and Losses



Main Battle Tank Ratios NATO Central Region, D-Day D + 96



Main Battle Tank Ratios NATO Central Region Sectors, D-Day to D + 35



The Warsaw Pact has a major surprise or sudden attack capability, and enough Category I and II divisions, as Table Six shows, to create a 3-1 superiority from roughly M+9 to M+30. The arrival of Category II divisions would raise the ratio to as high as 7-1. (The ratios would be even higher if they included the 36 Category III divisions in Table Five, which could arrive as early as M+30 and which would arrive by M+130 even under the most conservative estimates now available.)

At the same time, at least some aspects of the balance of uncertainty do favor NATO. Any such Warsaw Pact movements would literally involve the deployment of over one million men, regardless of what assumption is made about readiness. Even under worst case conditions, NATO will find countless opportunities for conventional "deep strikes" against key rail and road links and facilities. Under more favorable assumptions, such NATO strikes could vastly compound the uncertainties the Warsaw Pact faces because of nationality and readiness problems.

There is no question that the Warsaw Pact has the rail and road capacity to physically carry out the movements shown in Table Six, has large numbers of railway troops, and constantly practices such offensive buildups under the guise of dealing with "invasions" by NATO. It also now regularly practices extensive air movements from the USSR to fill in the manpower missing in its forward fronts.

A real-world attack, however, would be far more massive, could not be conducted on the set-piece and well-prepared basis of Soviet maneuvers and exercises, and would pose monumental risks. These include the risk of error and mistakes of the kind that occurred during the invasion of Czechoslovakia. Murphy's law works on both sides of the inter-German border. The best exercises in the world still leave many opportunities for things to go wrong.

Such attacks would also involve forces so great that the risk of ultimate escalation to nuclear conflict would rise close to near certainty. A sudden massive onslaught would leave no time in which to work out some "rules" regarding escalation and reliance on conventional combat.

The message behind the uncertainty in Table Six is, therefore, twofold. For NATO, it dramatizes the need to maintain large conventional forces in being in the forward area to deal with the risk of sudden buildups or surprise attacks and the need for deep strike capabilities that can halt or disrupt the juggernaut the Soviet Union will have to move west.

For the Warsaw Pact, every uncertainty regarding its buildup capability creates increased uncertainty regarding its ability to conduct a successful limited attack on the FRG or control the process of nuclear escalation. It is the cumulative risk of

trying to execute a massive build up by reserve and potentially hostile foreign forces using a peacetime army.

The Uncertainty of Geography

Like uncertainties surrounding readiness and buildup capability, the uncertainty imposed by geography cuts two ways. As Map One shows, time and distance affect both NATO and the Warsaw Pact.

Map One shows that the Soviet Union has seven tank and seven motorized divisions immediately near its border with West Germany, although at least four Czech and two East German tank divisions are equally close. These forces have at least 6,500 tanks (and possibly over 7,500), and for all the debate about the nature of first and second echelons in attacking Warsaw Pact forces and the arrival of forces from units in the rear or reserves, these forces give the Warsaw Pact considerable surprise attack capability.

The Warsaw Pact could conceivably begin an attack with the 3rd Shock Army and achieve significant limited gains before NATO could move out of its peacetime caserns. The Soviet Union could deploy substantial armored forces in the event of some crisis or incident or even launch a large-scale attack with forces in the forward area and rely on massive follow-on reinforcement without building up its normal Fronts, or carrying out the kind of prior buildup or force movements that would give NATO clear warning.

NATO has no guarantee that the Soviet Union will carry out the kind of attack that would force it to take full account of the nationality and readiness problems in its total force structure or the buildup uncertainties raised in discussing Table Six. It is just as credible that the USSR will set the limited objective of seizing just enough of the FRG to try to shatter NATO's unity before NATO forces can deploy to their combat positions.

At the same time, there is little prospect that Soviet forces will suddenly leave their caserns and arrive at the Rhine or the Weser. No matter what scenario leads to conflict, the Soviet Union will have to carry out major divisional-sized movements. The average Soviet division in the GDR is located 125km away from the inter-German border, and two-thirds are located more than 100km from the border even if one draws a line that ignores road lengths and terrain.

The Soviet Union also could not rely on any attack by the forces it has near the border. It would almost certainly have to commit all its forces in the GDR, Western Poland, and Czechoslovakia in a matter of days.

This means that unless the Warsaw

Pact carries out massive prior movements under the cover of some exercise (and movements close to the FRG on this scale would make such a cover thin), it will become vulnerable to NATO air and missile attack. This creates a strong linkage between any major land attack and the need to suppress or counter NATO air power.

This linkage creates new uncertainties regarding the ability to implement such attacks and nuclear escalation—given the increase in conflict intensity and the need to strike at dual-capable forces. It also means lucrative target opportunities for NATO, whether these are part of deep strikes or the air/land battle.

Map One also shows that NATO's current deployments put much of its armored strength in the forward area, and that NATO's forces are much better distributed to reinforce each other than NATO's national corps zones would indicate.

Roughly 80% of Egypt's Soviet-made combat-deployed tanks had broken down by the time Israel successfully crossed the Suez Canal in 1973, and comparable exercise data on the T-62 and M-60A1 show that the T-62 has a breakdown every 160-200km of operations vs. every 240-320km for the M-60A1.

German forces are well deployed in forward positions near the front. The US also puts substantial forces "in harm's way." If one includes selected Dutch and British units, NATO puts more than half its Central Region tank strength in positions where it can rapidly implement its forward defense strategy.

There are, however, serious problems and uncertainties in NATO's deployments as well as in the deployments the Warsaw Pact would have to carry out to attack. British, Dutch, and Belgian force cuts and redeployments leave the north German plains much weaker than is desirable.

As Map One shows, the 2nd Guards Army and 3rd Shock Army pose a constant threat that they could seize a limited part of German territory or spearhead a larger attack. As Map Two shows, the terrain of West Germany presents serious problems because the territory north of Helmstedt is far less easy to defend than the territory further south.

The area around Hannover remains a key problem, since British forces could

take 12-48 hours to deploy. forces in the Netherlands would take at least 48 hours to arrive, and Belgian forces could take up to four days.

NATO also has serious problems with its reserves. Ideally, the British Army of the Rhine should be reinforced with enough reserves to expand it from 55,000 to 147,000 men. It will take at least 10 days to fully deploy French forces from France (if these are in fact committed) and nine days to deploy any meaningful Danish support to the 6th German Division. A French unit would also have to move over 300km to come to the aid of even the northern sector of NATO's Central Army Group (CENTAG).

While NATO is well deployed in broad terms, few NATO units are deployed directly at their wartime positions, and about half the combat battalions in West Germany are 50 to 100km from the border. NATO requires between 24 and 96 hours to occupy forward defense positions of the kind that do most to prevent the loss of any German territory and provide the defender with the most advantage. While these movements are now far better planned and more flexible than in the mid-1970s, they still are complex and make NATO vulnerable to Warsaw Pact air interdiction and deep strike attacks.

Further, the Warsaw Pact's vast intelligence effort in NATO gives it near-real-time access to most deployment and readiness reports. The Soviet Union, for instance, probably does as good a job, or better, of tracking every key NATO officer with low proficiency, marital problems, or other difficulties as most NATO countries.

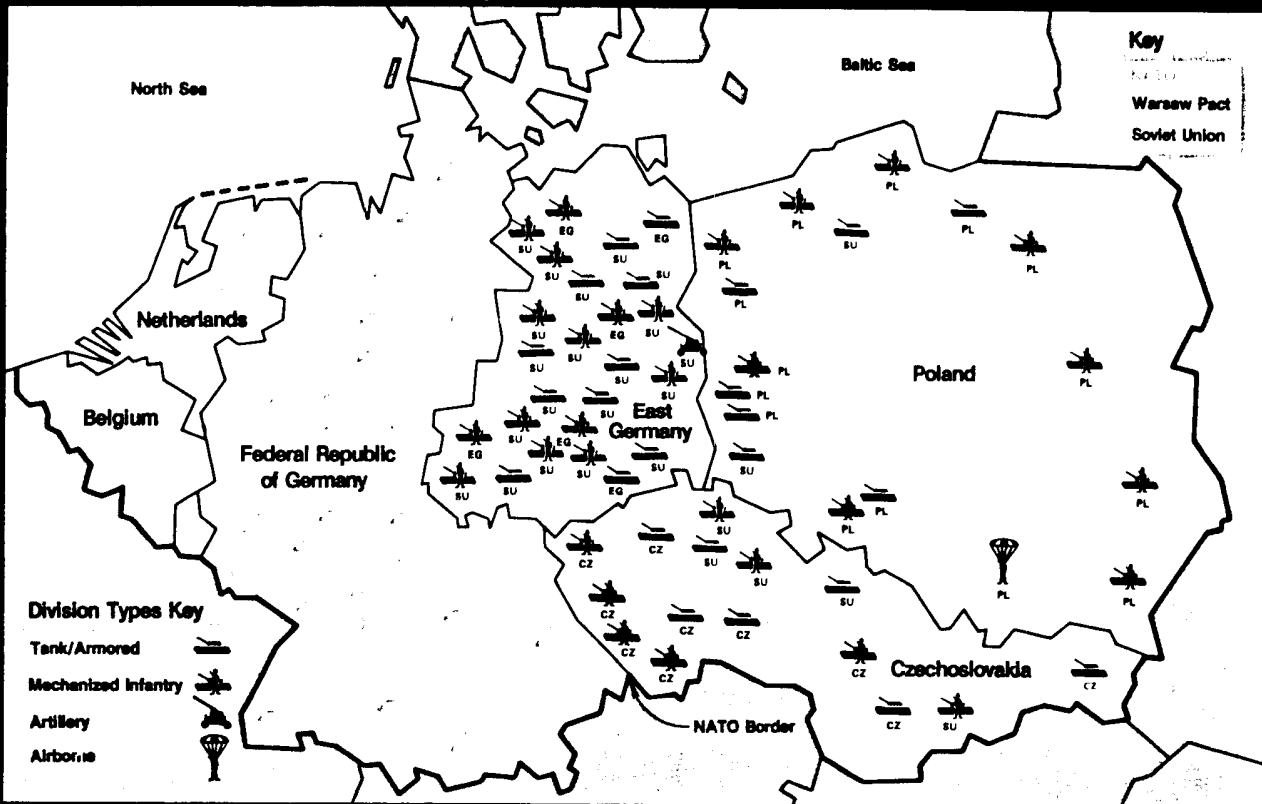
The problem NATO faces is to increase the uncertainty of geography in ways that maximize the vulnerability of Soviet and Warsaw Pact forces and minimize its own vulnerability in terms of uncertain warning, movement times, and the inevitable complication of problems like civilian refugees. It needs to increase the uncertainty of geography by increasing its ability to strike at every major Warsaw Pact movement in the forward area in ways which deny the USSR any high probability of being able to mass and penetrate.

The Uncertainty of Armored and Anti-armor Force Strengths

The uncertainties affecting nationality, readiness, buildup capability, and geography affect any effort to establish the balance of uncertainty in armor and anti-armor capabilities. Neither NATO nor the Warsaw Pact is a monolith that easily lends itself to a single count of the weapons that would be deployed on each side or which allows "bean counts" to be compared without regard to readiness, nationality, differences in force structure,

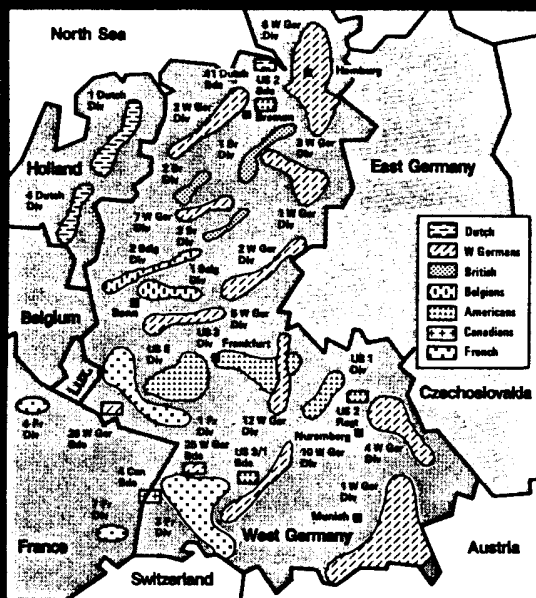
Map One The Geography of the Central Region Land Balance

Divisional Formations in the Central Region^{a/}

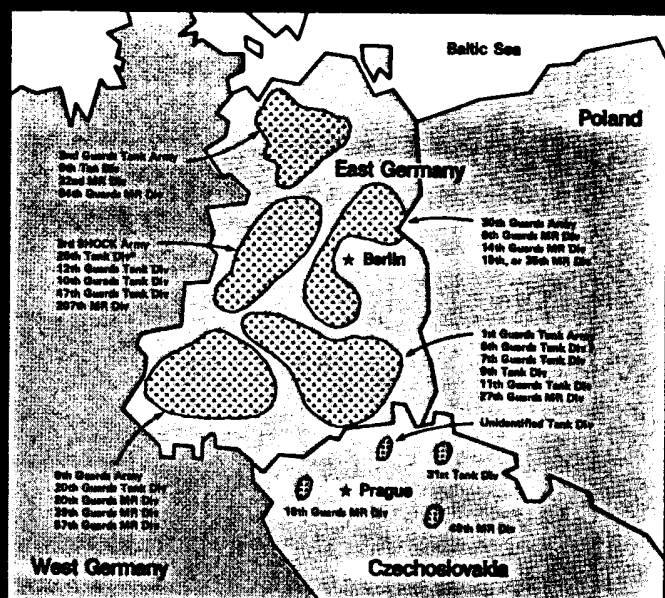


^{a/} Map of Central Region Shows the Approximate Peacetime Deployment of NATO and Warsaw Pact Divisions. Note that of NATO's Fourteen Armored Divisions, Eight (Four British, Three French, and One Belgian) Actually Have the Target Servicing Capability Equivalent of Only a US/West Germany Brigade or a Soviet Regiment.

NATO Combat Units on the Central Front^{b/}



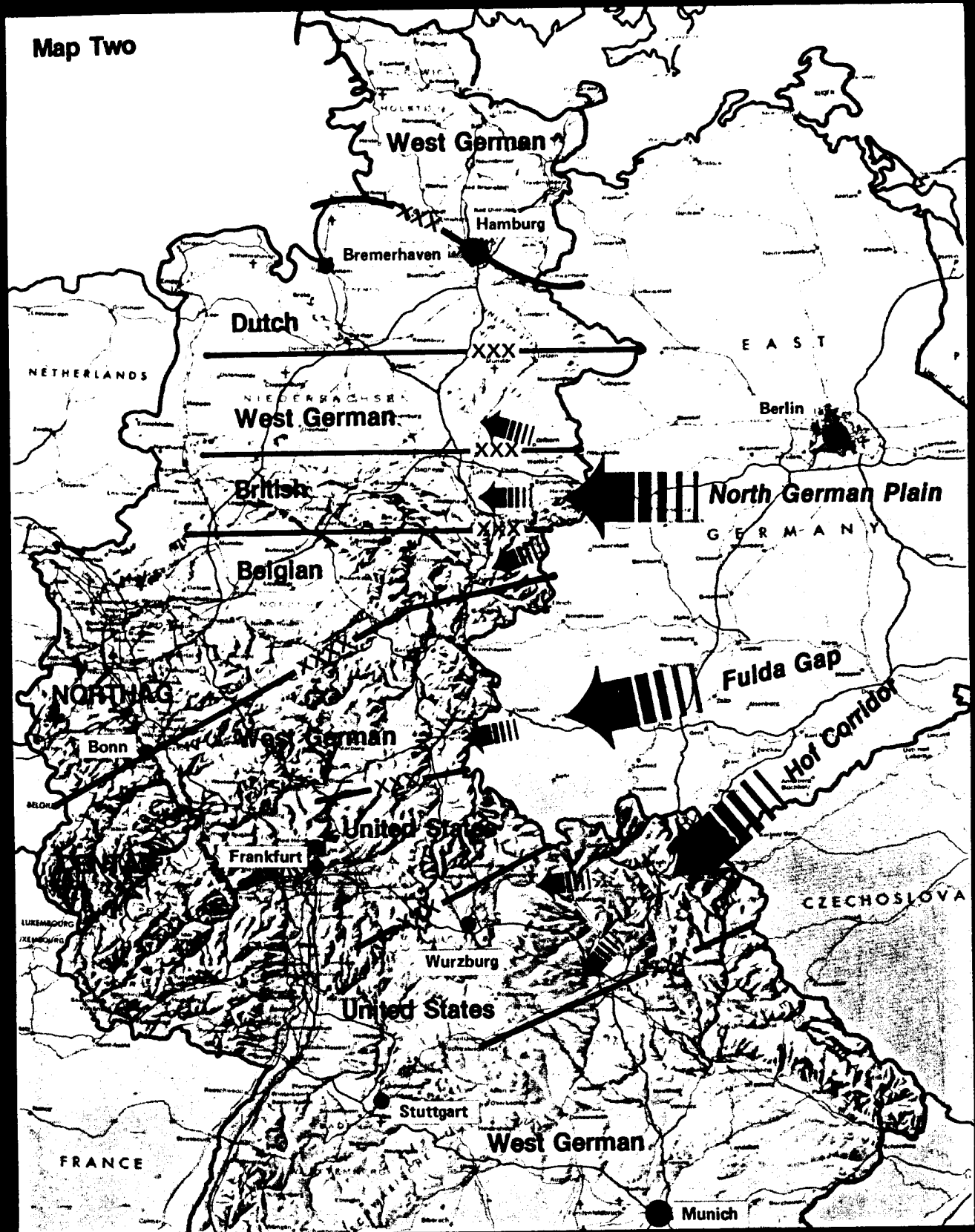
Soviet Forces on the Central Front^{c/}



^{a/} Approximate Locations Based on Late 1981 Estimates By Phillip A. Karber
^{b/} Adapted from *The Economist*, July 31, 1982, p. 31
^{c/} Adapted from John Collins, *The NATO Warsaw Pact Balance*, CRS 1980

Five Soviet Divisions Are Directly Subordinate to the Czech Group of Forces. The 30th Guards Motor Rifle (MR) Near Zvolen Is Off the Map in Eastern Czechoslovakia
 * Some Sources Shown in 2nd Guards Tank Army

Military Sectors in NATO's Central Region and Warsaw Pact Avenues of Approach



Source: Adapted from Richard Lawrence and Jeffrey Record, *US Force Structure in NATO* (Brookings Institution, 1974) and also from US Army materials

or the other uncertainties that can shape the outcome of a conflict.

Nevertheless, the overview in Table Seven on the next page provides some important insights into another critical aspect of the Central Region balance. It draws on the work of Phillip Karber discussed earlier and on trend curves adapted from the annual *Military Posture* report by the Joint Chiefs of Staff. While such estimates inevitably have uncertainties of their own, they still provide a reasonable picture of the kind of force ratios and uncertainties that NATO must deal with.

The Uncertainty of Tank Force Numbers and Sudden or Surprise Attack Capability

The first part of Table Seven shows the trends in the tank balance in the FRG and Benelux vs. the tanks in the GDR, Czechoslovakia, and Poland. It presents a worst case for NATO in that it excludes 1,000 pre-positioned tanks in the US, French and British tanks on their respective national territories, and Danish armor and does not take account of readiness. It presents a favorable case for NATO in that it excludes forces in Hungary and the USSR.

The force ratios in Table Seven are not, therefore, atypical of the ratios that emerge from most force comparisons for the Central Region. This is confirmed by the fact that the trends in Table Seven track reasonably well with the range of tank ratios in Table Two and the range of buildup estimates shown in Table Six.

The trends in Table Seven also track with the trends in tank production. The USSR is now producing 2,100 tanks annually to 650 for the US, and the Warsaw Pact is now producing 2,500 to NATO's 1,200. As is the case with most major arms exports, a much larger proportion of Warsaw Pact tank production is going to Pact forces than NATO production is going to NATO forces.

In fact, counts of tank strength sharply favor the Warsaw Pact regardless of how one counts NATO and Warsaw Pact tank forces. The Pact leads in terms of force trends, numbers, and modernization. The Warsaw Pact has increased its tank strength far more quickly than NATO, and trends favoring the Warsaw Pact have accelerated since the early 1970s.

The USSR reacted to the lessons of its invasion of Czechoslovakia and the Arab-Israeli conflict of 1973 and to the development of improved antitank weapons in NATO forces by greatly increasing the flexibility of its armored forces and their ability to carry out quick, large-scale attacks.

Warsaw Pact tank production outpaced that of NATO by 2.6-1 during 1978-82; much of this production was used to increase the number of tanks in Warsaw Pact forces. Roughly 50% of the

Soviet tanks opposing NATO are now T-64s, T-72s, or T-80s. The increase in Soviet tank strength in the GDR was particularly sharp and reflects shifts in Soviet doctrine which have no credible explanation other than an effort to increase Russia's ability to attack West Germany.

The USSR restructured its Fronts in Eastern Europe to provide far better air and mobile infantry and artillery support for armored movements. It corrected some of the weaknesses in its logistic and support forces, and has introduced new concepts of combat unit organization like the Operational Maneuver Groups (OMGs).

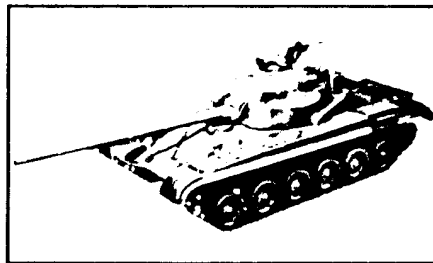
The OMG is task-force oriented and provides far greater and more flexible integration of combined arms. These forces are now acquiring helicopter squadrons and are supported by advanced command structures. Both they and the Fronts of which they are a part have shown a steady improvement in tactical skills and have largely broken away from the traditional rigidity of Soviet force structure.

These OMGs are specially structured and designed to penetrate NATO defenses in quick thrusts. They are backed by reorganized fronts which will support the OMG divisions with massive Soviet fighter, helicopter, and artillery attacks and the use of sabotage and special forces teams.

Each OMG division may have up to 415 tanks (vs. 325 for a regular Soviet tank division), and some experts feel they will be supported with special Soviet motorized rifle divisions with 266 tanks rather than 188. These divisions get the newest Soviet equipment and are steadily increasing their combat helicopter support.

In any case, changes in the larger Soviet formations on the inter-German border have given these armies a special meaning. The 3rd Shock Army shown in Map One is a good example. Although the 3rd Shock Army has less manpower than the British Army of the Rhine, it has 2.5 to three times more tanks, six times more artillery weapons, 1.5 times more combat infantry, 1.5 times more logistic lift, approximately seven times more antiaircraft weapons, substantially more nuclear delivery systems, and over 30 times as many major chemical warfare equipment items. Regardless of buildup uncertainties, these forces have substantial sudden or surprise attack capability.

While British divisions are the worst equipped in terms of major weapons strength of any divisions in NATO, these differences are paralleled throughout NATO and Warsaw Pact force structures in the Central Region. This is illustrated by the differences in the number of tanks and men per nominal division shown in Table Eight on p. 48.²



T-64



T-72

The three main strike groups in the four Fronts in Soviet forces in Eastern Europe now can command up to 200-250 battalion-sized combat ready elements in the first echelon of any attack on the Central Region. This is a force of up to 9,000 tanks, vs. 3,000 to 6,000 for NATO. For all their deficiencies, these forces all probably have 98% of their combat manpower and have sufficient stocks on hand for seven days of combat operations.

The USSR does not, therefore, face the same kind of uncertainties in tank numbers and armored offensive units that it faces in the previous balances of uncertainty. It is steadily improving its ability to conduct a quick and limited seizure of West German territory and to conduct conventional wars at sufficiently limited levels to raise doubts about the credibility of NATO's escalation to nuclear war.

The Uncertainty of Tank Quality and Support Capability

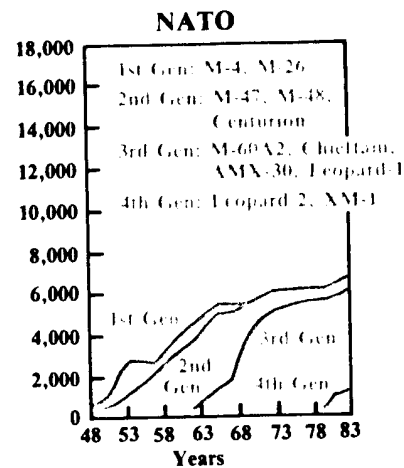
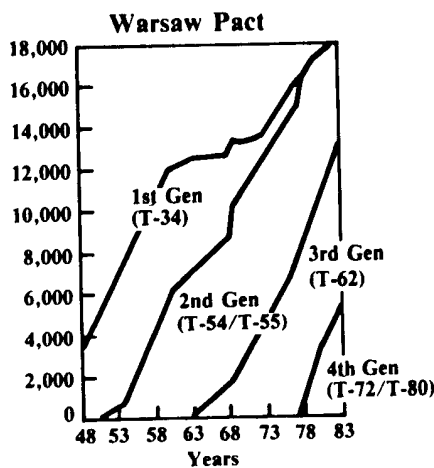
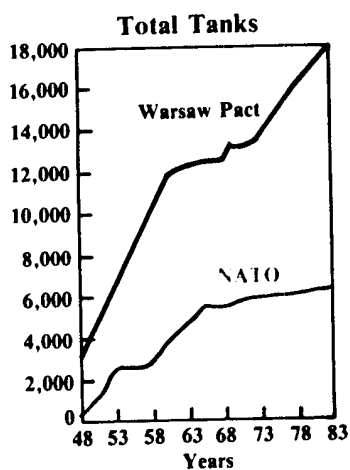
The Warsaw Pact, however, faces uncertainties in tank quality and support capability. While Table Seven shows that the Warsaw Pact is modernizing its tank pool more quickly than NATO, both sides are comparatively slow in modernizing their total strength. The earlier generations of NATO tanks were significantly better than comparable generations of Soviet tanks, and this gives NATO an advantage.

Even the new Soviet T-80 seems to be anything but a "supertank." It probably has composite armor in its hull, like all Soviet tanks since the T-62, and may

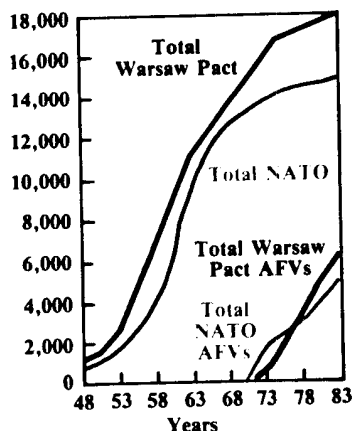
²Figures on average division size and equipment holdings differ significantly by source. The figures shown in Table Eight are typical, however, and the differences shown do not vary significantly from source to source.

Table Seven Central Region Force Trends: Tanks, Armored Vehicles, and Anti-Tank Weapons in Army Forces

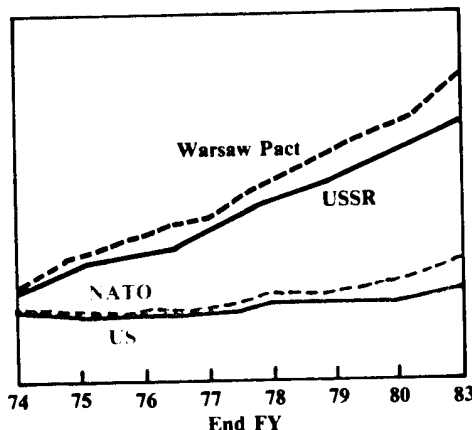
Stationed in Benelux, FRG, GDR, Czechoslovakia, and Poland



Other Armored Vehicles



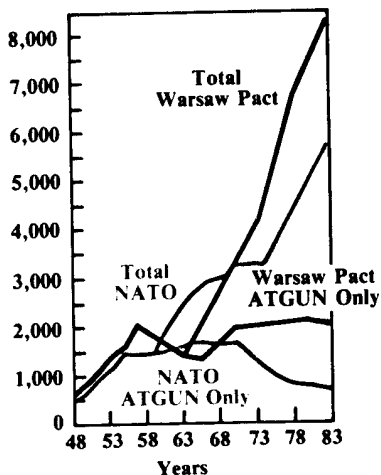
Armed Attack Helicopters in Combat Units*



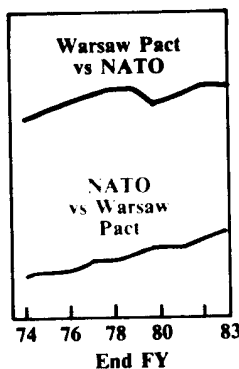
*Includes active and reserve forces—does not include USMC and USMCR equipment.

Anti-Tank Weapons

Total Heavy Antitank Weapons

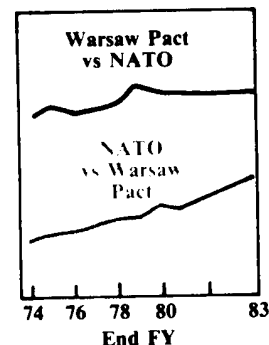


Anti-Armor Weapons per Opposing Tank*



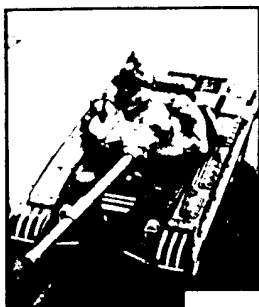
*Includes active and reserve forces. Anti-armor weapons include tanks, ATGM launchers, anti-tank guns, and Copperhead.

Anti-Armor Weapons per Opposing Armored Vehicle*



*Includes active and reserve forces. Anti-armor weapons include tanks, ATGM launchers, anti-tank guns, and Copperhead.

Source: Adapted from work by Phillip A. Karber and updated by the author for 1980-83 using the IISS *Military Balance* and CRS working materials, and from OJCS, *Military Posture, FY 1982* as updated by the author.



T-80



M-60A3

have such armor in its turret. It does not, however, have the US M-1's kind of advanced armor or that of the latest British tank designs. Like the T-64, it seems more of an evolutionary effort to correct the problems of its predecessor than a serious advance (May *AFJ*). The T-62 and T-72 make up the bulk of first line Pact forces, and even the T-72 retains many of the past defects of Soviet tanks which have been revealed by the fighting in the Near East.

While Soviet tanks have superior cross-country mobility and well-shaped armor and recent models have thicker conventional armor than the armor on NATO tanks, even the most modern types lack advanced range finders and fire control equipment. The newest Soviet tanks also have automatic loaders that require repositioning of the gun and which severely complicate operation of the tank.

Although Warsaw Pact tanks are rugged, they have not proved particularly reliable, quality control of critical parts is poor, and defects are not routinely corrected once tanks enter service. Roughly 80% of Egypt's Soviet-made combat-deployed tanks, for instance, had broken down by the time Israel successfully crossed the Suez Canal in 1973, and comparable exercise data on the T-62 and M-60A1 show that the T-62 has a breakdown every 160-200km of operations vs. every 240-320km for the M-60A1.

Soviet tanks lack flexibility in using a wide range of ammunition types and carry only 28-40 rounds (vs. 63 for an M-60A1). Their guns track slowly, and their turrets rotate at only 17° per second (vs. 24° for an M-60A1 and 40° or an M-60A2). Even the T-72 and T-80 seem to have extremely cramped cabins and poor human engineering, poor "buttoned-down" visibility, and problems while firing in defilade. Soviet tanks cannot shelter behind hills because their guns only de-

press a maximum of 4° (vs. 11° or more for NATO tanks).

While NATO tanks have many design defects of their own, they are less serious than those of most Soviet tanks, and even upgunned and re-engined M-48s with modern fire control may be superior to the T-80 in tank-vs.-tank encounters. The Warsaw Pact, therefore, must regard comparative tank quality as a significant uncertainty in evaluating its own capability.

Further, Warsaw Pact units still lack the tank recovery, repair, and replacement capability of most NATO divisions. While the Warsaw Pact uses training sets, rather than divisional equipment, to reduce tank wear and emphasizes reliability and crew repair of minor breakdowns, it designs its divisions to be consumed and replaced rather than sustained as operating divisions.

The Soviet Union has increased its training for long range penetrations and its logistic support in recent years, but recent maneuvers still reveal serious problems in conducting major armored penetrations, and Soviet tanks and artillery are still limited by poor cross-country logistic and service support. There is also little evidence that Soviet training makes up for the turnover of its tank crews and their lack of the kind of experience with mechanical equipment that is routine among similar age groups in the West.

The Uncertainty of Total Armored Vehicle Strength

The comparisons of "Other Armored Vehicle" strengths in Table Seven illustrate another area of uncertainty. NATO has only a marginal inferiority in the number of armored fighting vehicles and

personnel carriers in its forces, and far more of the NATO vehicles are fully protected tracked vehicles than those of the Warsaw Pact.

While the Warsaw Pact has overtaken NATO in the number of modern armored fighting vehicles in its forces and has equipped its other armored vehicles with better anti-infantry and light anti-armor weapons, NATO's strength still remains high. This may change over time because the USSR is producing 4,800 other armored vehicles annually (compared to only 850 for the US), and the entire Warsaw Pact is producing 5,500 compared to NATO's 1,800. But NATO's existing vehicles are generally superior in quality and have far more effective antitank weapons.⁶

In spite of the upgrading of Soviet armored fighting vehicles like the BMP, which proved disastrously ineffective and vulnerable during the fighting in 1973, the antitank guns (usually rocket launchers) and missiles on Soviet vehicles still use relatively low-lethality rounds with awkward guidance systems requiring prolonged visibility (thus making it hard to track a maneuvering target while on the move), long flight times, and extremely high operator proficiency—a proficiency rarely demonstrated in Pact maneuvers or training of Russia's Third World clients.

Even the most advanced Soviet systems, like the new BMP, have many design defects and large amounts of unnecessary "dead space" where the operator cannot track the weapon or fire. Major weapons cannot be fired in defilade,

⁶Based on 1978-82 averages. The US produced only 160 other armored vehicles in 1982 vs. 4,150 for the USSR, and NATO produced only 1,300 vs. 4,500 for the Pact.

Table Eight Comparative Tank Strength of NATO and Warsaw Pact Divisions

Country	Division Type	No. of Men		No. of Tanks
		Total	Per Tank	
US	Armored	18,300	78	324
	Mechanized	18,500	86	216
Britain	Mechanized	8,500	57	148
France	Mechanized	16,000	99	162
FRG	Armored	17,000	57	300
	Mechanized	17,500	70	250
Soviet	Tank—Forward Area	12,500	30	415
	Tank—Regular	11,000	34	325
	MRD—Forward Area	15,000	56	266
Other Pact	MRD—Regular	14,000	74	186
	Tank	12,000	37	325
	MRD	14,000	75	188

SOURCE: Adapted from the IISS, *Military Balance*, 1981-82, and previous editions. Note that many disagreements exist between various sources.

and most are more effective against hard, fixed targets in built-up areas than against tanks.

NATO has the option of upgrading or converting much of its present inventory of both armored personnel carriers and armored fighting vehicles to use modern antitank missile launching systems, and it would gain far more from such conversions than the Pact could gain—given its need to conduct an offensive with far greater numbers of tanks.

These trade-offs could range from keeping more older-model tanks in service as new tanks phase in to the purchase of more attack helicopters or deep strike munitions. They also favor NATO in that manpower costs tend to dominate the life-cycle costs of NATO units, and conversions of constant manpower levels to more expensive equipment would not mean major increases in defense budgets.

The Uncertainty of Antitank and Attack Helicopter Capability

The remaining trends in Table Seven are less favorable to NATO. They show that the Warsaw Pact has been far quicker to acquire "force multipliers" like attack helicopters and antitank guided missiles and now has a major lead in both areas.

While the comparisons of attack helicopters and of anti-armor weapon per opposing system are adapted from JCS figures which are NATO-wide rather than based on the Central Region only, they still illustrate very real problems in NATO's force improvement programs.

NATO has never collectively come to grips with the need for attack helicopters. While the recent fighting in Lebanon and the Iran-Iraq War have convinced all of the countries involved that added attack helicopters with antitank guided missiles represent a vital force improvement—and one worth substantial trade-offs in terms of regular infantry—NATO has tended to purchase few systems and concentrate on a slow-moving R&D effort.

In contrast, the Soviet Union has seen the helicopter as a powerful means of disrupting NATO in the rear, halting NATO movements, outflanking NATO armor and air defenses, and supporting its own breakthrough attempts. It has steadily upgraded both the number and firepower of its attack helicopters and built them into a major force in the Central Region.

There is now one Soviet helicopter regiment per ground army in the Soviet forces, and this may increase to two by the mid-1980s. More important, the USSR is now rapidly deploying one attack helicopter squadron of six Mi-24 Hinds per division, and East Europe seems likely to follow.

The USSR has as many as 600 Mi-24 (Hind) attack helicopters in Eastern Eu-

rope positioned where they could be rapidly committed to any attack. This force may well exceed 1,000 helicopters by the mid-1980s.

The USSR also has large numbers of Mi-8 (Hip) armed lift helicopters. While these are unarmored and slow maneuvering and have problems flying nap-of-the-earth to avoid short range air defenses, they are adequate for long range (460km maximum) assaults on NATO targets in the rear—particularly under the surprise or sudden attack conditions which Soviet forces in the GDR regularly exercise.

The USSR again leads the US in production. It produces 400–450 annually compared to 150–160 for the US, and the entire Warsaw Pact is producing 500 military helicopters annually compared to 200 for NATO.

The Pact is deploying a substantially larger proportion of its total production with its own forces than NATO and has completely overcome the US' once commanding lead in helicopter gunships. The US led the USSR by 702 attack helicopters to 0 in 1970. The USSR built its attack helicopter strength to 400 in 1978 and to 800 by early 1983. It overtook the US in 1981 and has steadily increased its lead since.

Russia has a total pool in the Central Region and western USSR of well over 1,000 M-8C (Hip) armed transports and Hip E (Gunships) and 1,000 Mi-24 A-F attack helicopters. The GDR has 70–85 Mi-8 and 24–28 Mi-24s, Czechoslovakia has 20–30 Mi-8 and 24–36 Mi-24s, and Poland has 22–30 Mi-8s and 24–48 Mi-24s.

In contrast, the US has only about 575 helicopters in the Central Region. While US Army and Marine Corps forces have over 1,000 armed helicopters in worldwide service, they had a worldwide inventory of only 324 of the newer AH-1S TOW at the end of 1982, and the first AH-64 Apaches will not become operational until early 1985. These are the kind of helicopters needed for combat in the Central Region, yet many are committed to contingencies in the Gulf.

Belgium has 60 Alouette II, some of which have limited attack capability; Britain has 90 Lynx/AH-1, some of which have TOW; Canada has virtually nothing; the FRG has 84 armed helicopters, only some of which are B0-105Ps with HOT antitank missiles; and the Netherlands has 24 B0-105s which evidently lack anti-armor armament.

Denmark has 12 Hughes 500As but evidently will not commit any combat helicopters to the Central Region land battle. France has 66 Alouette IIIs with SS-11, 118 SA-330.Puma, 154 SA-314F, and 42 SA-342M with HOT but also seems unlikely to commit any significant proportion of its attack helicopter strength to the forward defense of Europe.

The US Army's efforts to rush the

production of advanced attack helicopters are, therefore, scarcely the result of an obsession with attrition or advanced technology. According to US estimates, NATO has only 400 attack helicopters in the Central Region. NATO does seem to retain an advantage in terms of helicopter maneuverability, protection, sensors, and antitank weaponry, but it must make major increases in production to take advantage of this opportunity and offset the Soviet advantage in production.

There also is growing uncertainty regarding NATO's lead in technology. While the performance of the Hind D and Hind E has been overestimated and both still seem to lack advanced antitank weapons, the Hind F seems to represent a test bed for more advanced laser-designated missiles, and Soviet armor and maneuverability have improved steadily as the result of lessons from the fighting in Afghanistan.

The Uncertainty of Antitank Weapons

For all its rhetoric about force multipliers and force improvements, NATO has treated antitank weapons in much the same way the British army treated the machine gun before World War I: as an exotic weapon to be deployed only to skilled operators in relatively few numbers.

No NATO army in Europe has deployed long range antitank launchers in densities approaching those of Warsaw Pact forces.⁷ While NATO has significant numbers of missiles, it is curiously lacking in major antitank launchers for a force which is defensive in character and which has made the acquisition of such weapons a major force improvement goal since the mid-1960s.

In contrast, the Soviet Union has deployed very large numbers of missile launchers as well as much larger numbers of antitank rocket launchers. It also has gradually replaced its unreliable, slow, and cumbersome first-generation missiles with more advanced second-generation systems. These include the AT-4 Spigot, AT-5 Spandrel, AT-6 Spiral, and at least two more advanced types.

Unlike earlier Soviet antitank guided missiles—which were slow, could not be fired at short ranges, required incredible levels of operator dexterity, and had poorly designed and highly unreliable warheads—these newer Soviet systems share many of the features of the most advanced Western semiautomatic command "track target only" systems. The guidance systems of the AT-4 and AT-5

⁷The US has such launcher numbers only if one counts the Dragon, which has limited effectiveness and cannot penetrate the frontal armor of newer Soviet tanks.

are still somewhat awkward and unreliable by comparison, but the AT-6 may be appearing with a laser-designated warhead in both vehicle and Mi-24 launched versions.

Further, the role of the antitank missile is somewhat different in Soviet forces. Soviet maneuvers reveal a heavy use of such missiles against NATO infantry in other armored vehicles and using the cover of built-up areas. These targets rarely move, and Soviet missiles are much easier to use against them. The USSR can also screen its superior tank forces by denying NATO the ability to advance. It does not have to achieve the same extremely high attrition ratios against tanks with antitank guided missiles (ATGMs) that NATO must achieve.

As a result, the main uncertainties which affect the balance of antitank weapons consist of force improvement options which can shift the balance in favor of NATO rather than weaknesses in Warsaw Pact forces:

- First, there is no intrinsic reason why NATO cannot develop greatly improved antitank and attack helicopter forces. It has the resources to do so, particularly if it is willing to concentrate on a mix of high-capability and low-cost helicopters and emphasize antitank missile launcher numbers rather than missiles.
- Second, NATO still seems to have a lead in guidance and sensors. In spite of recurring rumors about "launch and leave" Soviet antitank guided missiles

and next-generation Soviet systems, Russia's existing missiles seem to have far less operational lethality than NATO systems like TOW and HOT.

• Third, the advantage would seem to lie with the defender. Well-positioned defensive forces should be less vulnerable than attacking armor, regardless of their air defenses and antitank guided missile suppression capabilities.

It is also clear from Soviet writings and exercises that the USSR fears NATO's antitank weapons, regardless of the shortages in NATO weapons. The USSR has developed extensive doctrine on deploying high densities of tanks against prepared antitank weapons defenses and has restructured its training to stress outflanking and enveloping such defensive positions while increasing its rate of advance to prevent antitank weapons defense from being properly sited and deployed.

Even given the ratios shown in the lower half of Table Seven, NATO already has significantly enhanced its defensive battle fighting capabilities over what it could achieve with tanks, and the USSR must take NATO's superiority in antitank guided missile technology into serious consideration in evaluating its chances of success.

The Uncertain Balance of Artillery Strength

The balance of uncertainty in artillery also favors the Warsaw Pact. As Table

Nine shows, the Warsaw Pact has a massive advantage in numbers and in its rate of modernization.

The USSR has greatly increased its combat support artillery in recent years, and its army-level artillery regiments are being expanded to brigades—an increase of 30–80%. Its divisions are getting new self-propelled and nuclear capable guns, and artillery battalions are being added to each tank regiment in Soviet tank and motorized rifle divisions. This has resulted in a 30% increase in the combined tube artillery, heavy mortar, and multiple rocket launcher strength of the Soviet armies and divisions in Eastern Europe since 1978.

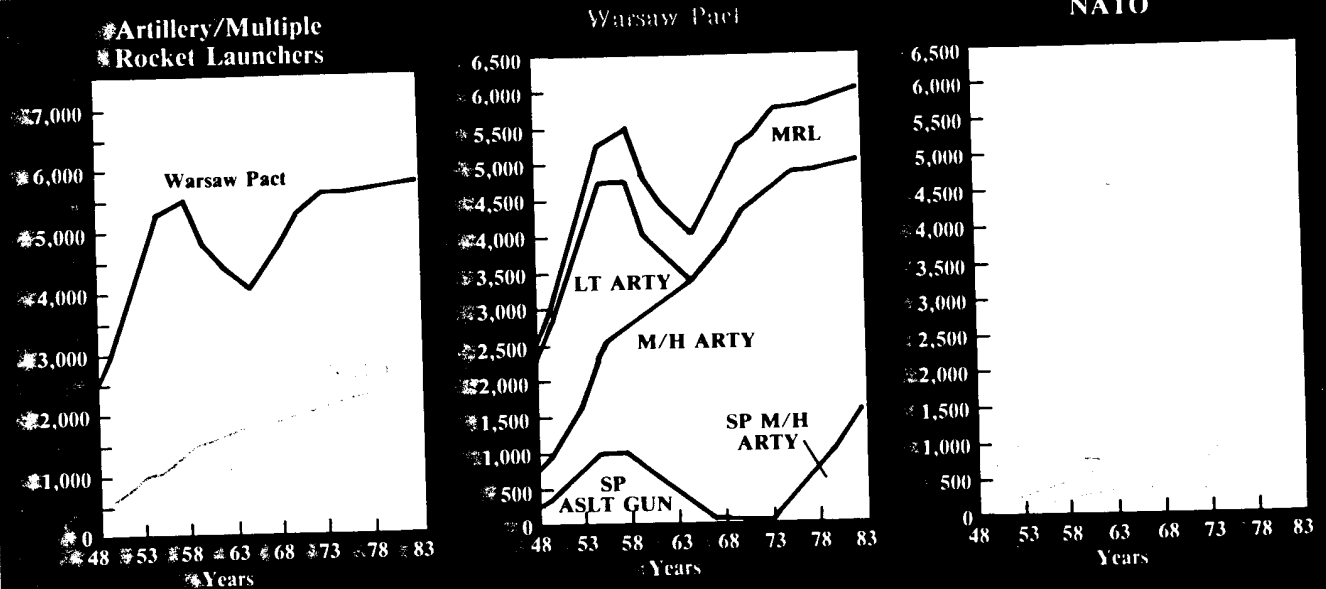
This, however, is only part of the story. Warsaw Pact artillery is generally superior in terms of range, operational rate of fire, reliability, and barrel life. Further, a much larger proportion of Warsaw Pact artillery consists of multiple rocket launchers (MRLs) which can deliver immense amounts of suppressive area fire against NATO infantry and antitank units during the assault or breakthrough phase of an attack.

The Uncertainty of Artillery Quality

There are some compensating uncertainties. While the amount of self-propelled artillery in first line Soviet forces has increased to the point where more than 40% of the Soviet artillery in East Europe is now self-propelled (vs. only 17% in 1978), many Warsaw Pact units

Table Nine Central Region Force Trends: Artillery Weapons in Army

Forces Stationed in Benelux, FRG, GDR, Czechoslovakia, and Poland



Source: Adapted by the author from work by Phillip A. Karber and from OJCS, *Military Posture*, FY 1978, FY 1980, and FY 1982 using CRS and IISS data.

still use towed weapons. The Pact is unlikely to fully convert to armored self-propelled artillery like that common in most NATO units, although it is continuing to deploy nuclear capable heavy artillery brigades armed with self-propelled 240mm mortars and 203mm guns. It is also introducing two new 152mm guns, one self-propelled, and a new 16-tube 220mm multiple rocket launcher.

The Warsaw Pact does not have fire computers and targeting aids equal to those in the best NATO units, has fuzing and artillery round reliability problems, and does not have rounds with the same lethality against soft targets—although its fragmentation patterns are generally more lethal against light armored vehicles than those of NATO.⁴

The need to carry out linear deployment of artillery in the Pact units that still use towed weapons leaves 80–85% of the personnel involved without cover, and the USSR has not succeeded in modifying its artillery organization to remove its dependence on a few highly skilled officers, NCOs, and technicians. Soviet writings indicate that Soviet artillery units are highly vulnerable to the loss of such personnel.

Overcentralization and lack of skilled personnel make it difficult for Soviet artillery to shift fires rapidly or adapt to new tactical conditions. This is compounded by a lack of adequate communications—a problem Iraqi forces (which are based on Soviet models) found crippling during the early phases of the Iran-Iraq War.

While the USSR is deploying new target acquisition and command vehicles like the BMP, ACRV-2, and the MT-LB radar vehicle, even its best forces have problems engaging mobile targets.

The Warsaw Pact also has uncertain ability to sustain its theoretical rates of fire and to provide the massive ammunition resupply needed to take full advantage of its numbers of tubes. Unfortunately, NATO intelligence seems rather uncritical of the potential weakness of this aspect of Soviet force capabilities, and it is difficult to weigh how important such problems are, but it does seem likely they will keep rates of fire substantially below the levels called for in Warsaw Pact doctrine and artillery exercises.

⁴The problem of lethality is complex. Many US manuals that criticize Soviet rounds assess only lethality against exposed infantry. Most targets in a NATO-Pact conflict will, however, have either light armor or ground protection. Some "highly advanced" US rounds are "advanced" only if the target is not protected and is vertical or crouched on a perfectly flat plane. Independent British and German studies have shown such rounds to be substantially less lethal against real-world targets than ordinary NATO or Soviet rounds.

The Uncertainty of Artillery Production

Even so, these uncertainties do not make up for NATO's current deficiencies, and the future looks even grimmer than the trends in Table Nine indicate. The USSR produced an average of 2,450 artillery weapons annually during 1978–82, compared to 170 for the US. The Warsaw Pact produced 2,800 weapons compared to NATO's 400.

During the last two years, however, annual Warsaw Pact production has increased to 3,750 weapons, while NATO production has dropped to 300. This is giving the Warsaw Pact a superiority of 12-1, and again, far more of the Pact's production—particularly of the most advanced types of self-propelled weapons and MRLs—goes to Pact forces. NATO is devoting a heavy proportion of its total production to export.

The Uncertainty of Relative Area Fire Capability

NATO has also made many of its problems worse. Instead of seeking weapons with area fire capabilities or exploiting its technical lead in smart submunitions, it has tried to field direct fire solutions to killing tanks and artillery. The result has been expensive artillery rounds like the 155mm Copperhead laser-guided projectile. While the US Army maintains its faith in such systems, such weapons can achieve only limited rates of tank attrition because of the limited number of tubes involved relative to the threat. Further, they require laser designation or line-of-sight targeting.

NATO has been equally unsuccessful in fielding battlefield electronics to deal with the Warsaw Pact superiority in artillery numbers. It must still rely on direct or near-direct hits, and a long series of costly and unreliable targeting and fire control systems has left NATO with the need to fire tens to hundreds of rounds to suppress a single Warsaw Pact weapon. NATO still has virtually no hope of survivable exchange ratios against Pact artillery.

Accordingly, the key uncertainty is again NATO's ability to take advantage of a force improvement option. The FRG has already deployed 176 LARS 110 multiple rocket launchers (MRLs). Unlike tube artillery, the LARS can deliver very high rates of fire over short periods of time. It also can deliver large numbers of anti-armor minelets. Although the LARS minelets lack terminal homing and are not very lethal, they have the advantage against an attacker that must move often and along predictable paths.

The US Army is now deploying its own multiple launcher rocket "system" (MLRS) and is improving it to combine

smart munitions and long range targeting capabilities to achieve much higher lethality against tanks and artillery. The first MLRS unit became operational late in May and will deploy to Europe this summer.

While this US multiple launcher rocket system has had a slow gestation and still falls short of being the perfect "assault breaker," it and similar German efforts unquestionably offer far more potential than existing NATO artillery. They give the advantage to the defender, can increase the balance of uncertainty in NATO's favor, and offer NATO the ability to reverse at least some of the trends in Table Nine.

The Uncertain Balance of Tactical Air

Table 10 shows the final major balance of uncertainty, one which partly reverses the previous trends favoring the Warsaw Pact but one which also raises major uncertainties for NATO.

The Uncertainty of Numbers and Weapons System Quality

The Warsaw Pact lead in aircraft numbers shown in Table 10 is misleading, as noted earlier. The Pact totals include strategic defensive aircraft which are unlikely to be used against NATO in large numbers, and the comparisons exclude large numbers of tactical aircraft which both sides can rapidly deploy from outside the Central Region.

Both the Warsaw Pact and NATO will probably be limited more by base support, munitions, and C'I in the forward area than by aircraft numbers. While the Warsaw Pact has an advantage in air base numbers—about 45 major bases for attack aircraft in the forward area and over 200 bases in Eastern Europe (vs. a total of around 70 NATO main operating bases in the entire Central Region)—NATO still enjoys a slight numerical advantage in the number of bases near the inter-German border within the normal operating radius of its combat-loaded attack aircraft. NATO bases also have substantially better ability to survive combat damage.

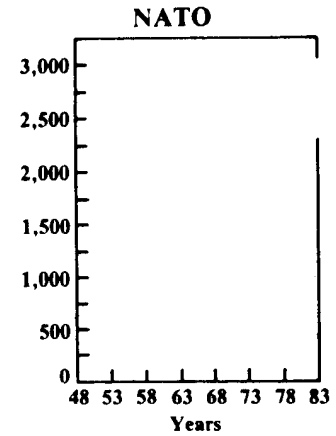
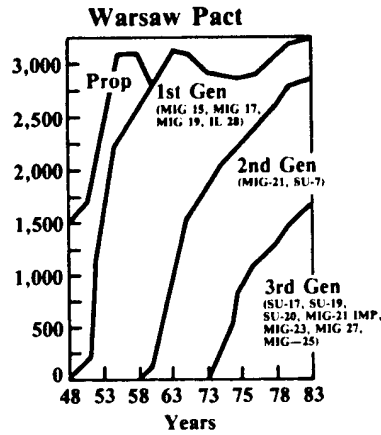
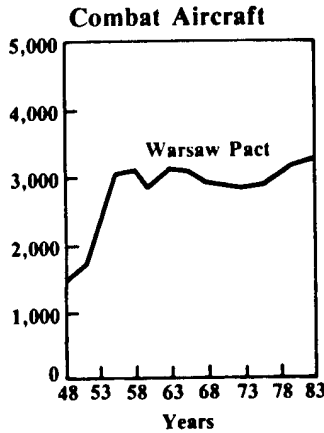
In spite of the "generations" shown in Table 10, NATO has a distinct advantage in terms of individual aircraft capability, munitions, and numbers of aircraft that can directly support the land battle. Although the allocation of aircraft by major mission shown in Table 10 indicates the Warsaw Pact has large numbers of fighters with at least dual capability in the attack role, few have the avionics to acquire and hit ground targets with high lethality.

NATO also draws major advantages from its superiority in airborne early warning and control, in electronic warfare, and in air-to-air missiles and retains

Table Ten

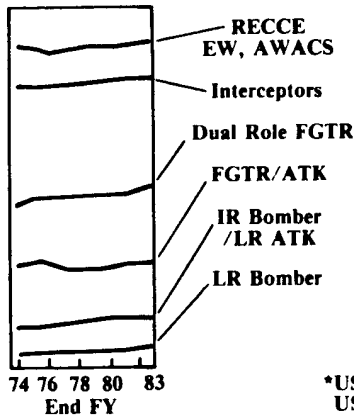
Central Region Force Trends: Combat Aircraft and Air Defense Weapons Normally Deployed in Benelux, FRG, France, GDR, Czechoslovakia, and Poland

Combat Aircraft Strength

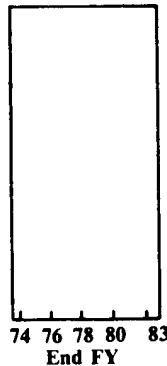


Allocation to Major Missions

Warsaw Pact Aircraft



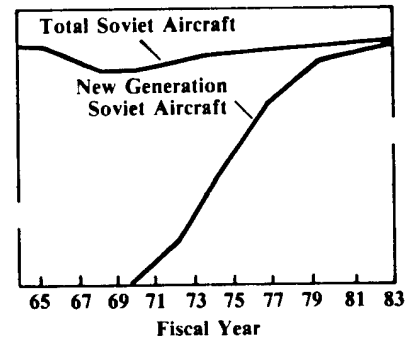
NATO Aircraft*



*USAFR, USANG, USNR, USMCR included.

US and Soviet Modernization

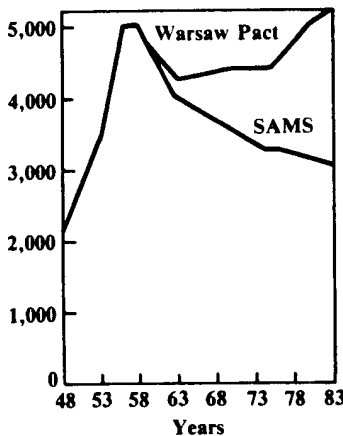
US/USSR Fighters* (Central Region)



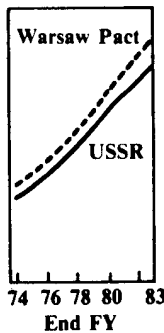
*US figures include aircraft based in UK; Soviet figures do not include aircraft based in western military districts.

Air Defense Weapons

Air Defense Weapons

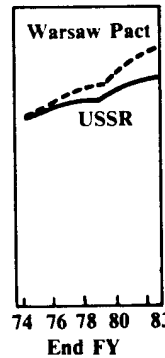


Mobile Tactical Surface to Air-Missile Launchers*



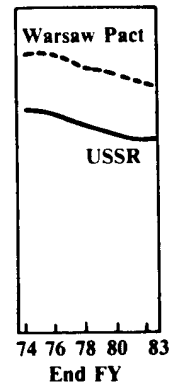
*Includes active and reserve forces.

Manpacked Surface to Air Missiles*



*Includes active and reserve forces.

Anti-Aircraft Artillery*



*Includes active and reserve forces.

Source: Adapted by the author from work by Phillip A. Karber, and from OJCS, *Military Posture*, FY 1977 and FY 1982, and updated on the basis of data issued by the IISS, OJCS, CRS and NATO.

at least some superiority in surface-to-air missile technology. The Improved Hawk, for instance, is probably better than any system yet deployed in Eastern Europe.

The comparisons of ground based air defenses shown in Table 10 also include large numbers of Soviet homeland defense systems that will probably never move near the front. They also include large numbers of short range systems like the SA-7, SA-8, and SA-9, whose operational lethality now seems far more limited than most intelligence experts originally estimated. Neither the radars nor IR seekers on Soviet equipment have advanced as quickly as has been expected.

The Uncertainty of Comparative Production and Deployment

NATO does, however, face a very real and growing threat. NATO must take advantage of its force improvement opportunities if it is to maintain even the present balance of uncertainty. For all the definitional problems in Table 10 over what to count and what belongs in a given generation, there is no question that Table 10 is correct in reflecting far greater Warsaw Pact production and deployment levels.

The Warsaw Pact is producing 700-850 combat aircraft annually to NATO's 600-650. The Warsaw Pact is also deploying almost twice as much of its total combat aircraft production in Pact forces as NATO is deploying out of its total production. The Pact is producing 400-500 military helicopters annually vs. NATO's 200-300 and again is deploying more than twice as many in its own forces.

The Warsaw Pact is producing 28,000 surface-to-air missiles annually to NATO's 7,200-8,500 and is deploying three to six times as many in its own forces—depending on how one counts man-portable missile systems. The USSR has also begun to make major improvements in its air defense deployments, sensors, and electronics which vastly outpace the rate of improvement in NATO systems. European experts say that the Pact has recently begun to deploy over 10 times as many new major short range air defense systems as NATO.

The Uncertainty of Tank Killing Capability

NATO also faces the problem that air power has only secondary value in strengthening deterrence. The imbalance in armor, artillery, and potential build-up capability is so great that NATO must concentrate on killing tanks, combat units, and the choke points through which Pact ground forces must move.

NATO must commit its aircraft to these missions beginning on the first day of combat. NATO cannot wait to win the

war in the air or to see the effect of strikes against less immediate interdiction targets. By the time such attacks can be effective, the ground personnel on NATO air bases will be speaking Russian.

This, however, raises grave uncertainties about the value of NATO's present air power. While NATO has a major advantage in the range-payload capability of its attack aircraft, it faces many of the same problems with these aircraft that its artillery faces.

NATO has focused development of its air power on line-of-sight, direct kills of ground targets. Thus NATO Tac Air at best is a force that might generate one tank kill per pass. More likely, it will generate about one tank kill per sortie. Since present weapons require that the planes overfly their targets against dense, mobile, forward area air defenses, the planes are not likely to survive many sorties.

The US Air Force has the most technically sophisticated force in NATO. Its present mix in the Central Region includes 70 A-10, 85 F-111F, 65 F-111E, 95 F-4E, 25 F-4G, 70 F-16A, five F-16B, 90 F-15C, five F-15D, 20 F-5E, 35 RF-4C, and 40 OV-10. In addition, it has 50 dual-based F-4E and 55 RF-4Cs.

For all this sophistication, however, only its 70 A-10 (70 out of over 700 aircraft produced) are optimally configured for killing tanks, and they are hard-to-fly "day" aircraft which derive from designs formulated before Russia deployed modern air defense weapons that move forward with combat units.^{*}

While virtually all USAF aircraft can carry large payloads, none have the kind of modern avionics suite necessary to use missiles like Maverick against armor or most hard targets. At present rates of conversion, USAF will also lack such F-16E or F-15E equivalents until the late 1980s and will not be able to convert more than half its force before the year 2000.

The rest of NATO is even less prepared to carry out its most vital mission. NATO's main first line fighter is, after all, the F-16. Although this is a fine air defense aircraft, it was deliberately chosen in a configuration that did not include advanced attack avionics. Mirage variants are equally limited at best, as are all configurations of the Jaguar and the British and West German variants of the F-4.

The Tornado is the only aircraft in the Central Region with the avionics and capability to carry out precision guided missile strikes with high survivability, yet even it is not specially configured for this mission. While some other Belgian, British, Danish, Dutch, French, and West German fighters can fire missiles like Maverick, all lack the avionics to

^{*}A growth version of the A-10 that corrects most of these problems has not been procured.

achieve more than marginal aircraft-to-tank kill ratios in the forward area, much less in missions against second echelon or buildup forces.

This leaves NATO facing a key force improvement uncertainty and one that explains much of the thrust behind "strike deep," the "air/land battle," and SACEUR's recent conventional force improvement initiatives. Developments in standoff weapons and near-zero CEP smart submunitions could allow NATO to use its existing fighters and those on order to strike at key Warsaw Pact ground targets using smart *area* weapons that can be fired from survivable ranges and on a launch-and-leave basis. (Nov, Dec, Jan AFJs).

Advances in sensors and C'I systems can allow NATO to locate such targets on the move and regardless of weather and provide near-real-time targeting data to NATO aircraft. The avionics on virtually all Central Region fighters are already good enough to allow low-altitude penetration and the use of such smart area munitions even under poor weather conditions. Such systems are suited to a defensive alliance because it is much harder to locate and kill dispersed and comparatively static defending forces than armored units on the move.

NATO can thus correct the critical deficiencies in its forces and take advantage of the favorable aspects of the balance of uncertainty in air power. West Germany has already begun to do this by arming its Tornados with such weapons, and many others are under development, including light submunition dispensers that can be fitted to virtually any NATO fighter. The key uncertainties are those of timing, procurement quantities, and the speed with which NATO can adapt its air doctrine, tactics, and training.

The Uncertainty of Air Defense

NATO will also have to come to grips with another uncertainty. The rate of improvement in Soviet aircraft and ground based air defenses shown in Table 10 raises serious doubts about NATO's ability to cope with massive, surprise air attacks or to operate effectively in protecting its ground forces and attacking Warsaw Pact ground targets.

This confronts NATO forces in the Central Region with yet another set of force improvement uncertainties. First, good as the Improved Hawk missile is now, it must be replaced with a successor at some point in the 1980s. While it is not obsolete or ineffective, like the Nike Hercules, it is growth limited.

NATO can only compensate for the growth of Warsaw Pact air power, however, if it procures large numbers of highly advanced and expensive surface-to-air missile systems like Patriot and makes major improvements in its all-weather, short range air defense systems

(SHORADS). These improvements have received only minimal funding in existing NATO force plans, notwithstanding increasing Congressional support for them.

This raises serious uncertainties about funding. Deploying Patriot with the necessary electronics will be incredibly costly relative to NATO's present investment in air defenses. Coupled to necessary improvements in SHORADS and passive defenses, it could add \$10- to \$15-billion to the investment costs of the plans now submitted to NATO.

Further, NATO must find some means of dealing with Warsaw Pact aircraft. It needs to reduce the vulnerability of its air bases through improved dispersal bases and co-operable air bases (which Congress has not funded well), but it will still have less than 200 bases. V/STOL systems like Harrier cannot provide a meaningful near-term answer: even under optimal conditions, NATO could not acquire large numbers of suitable V/STOL aircraft in less than a decade simply because of development, production, and funding constraints.

Such measures also will not suppress Warsaw Pact air forces within the time required to halt an armored attack or to deter Pact strikes on NATO air bases. This, in turn, explains the recent emphasis on the use of ballistic missiles carrying conventional warheads with smart submunitions designed for air base suppression as well as halting or killing Soviet armor moving towards the front (May *AFJ*).

While such technologies may seem esoteric or some new extension of the arms race, they are a natural alternative to early nuclear escalation and could reinforce deterrence regardless of the growing vulnerability of NATO air bases. They are yet another key force improvement option in dealing with the balance of uncertainty. They also, however, could add another \$10-billion to the cost of the force improvements NATO must make by 1990.

Weighing the Balance of Uncertainty

The balance of uncertainty, therefore, does not support either fear or complacency. The complex mix of capabilities and trends that now make up the balance of uncertainty in the Central Region indicate that NATO still has great deterrent strength. While many key trends are shifting in favor of the Warsaw Pact, NATO still has a remarkably strong mix of conventional forces in the Central Region.

It is also clear that NATO has serious weaknesses, but even where it is weak or has miscalculated, it still has major force improvement options. NATO can unquestionably sustain enough conventional capability to make a Warsaw Pact attack virtually unthinkable to the Sovi-

et Union. Grim as some current trends, force ratios, and numbers may be, each member country now has the resources to create a balance of strength in the Central Region. NATO can continue to leave the Soviet Union with no choice between conventional stalemate and defeat, and unacceptable nuclear risks.

The Uncertainty of "Conventional Wisdom"

The trends in the balance also support the thrust of NATO's "conventional wisdom." They show that NATO's priorities do lie in the areas suggested by SACEUR, by the work done to develop NATO's key long term force improvement programs, by new initiatives like strike deep, and by studies like the "Air-Land Battle 2000."

NATO's uncertainties are not, therefore, ones that stem from a lack of resources or options. They stem from the need to build a political-military consensus around the value of strengthening deterrence and to revive popular support for the Alliance.

They stem from the need to build confidence in NATO's mix of conventional forces and ultimate dependence on nuclear deterrence rather than cloak it in an image of weakness. They stem from the need to make hard and painful trade-offs and to stop treating key force improvements as ones which can be layered on existing budgets or as some kind of "free lunch."

The Uncertainty of NATO Military Planning

The first step in this process must be to rethink NATO's force goals and assessments in terms of deterrence rather than war fighting. Many senior NATO officers probably already accept this requirement, but it still seems to present major problems for NATO planners, and NATO's rhetoric still does more to provoke fear of nuclear war than support for adequate forces.

Western planners have learned to live with the fact that strategic nuclear war has no end game: no clear resolution that ends in victory or even a predictable termination on equal or favorable terms. They have not learned to live with the reality that there is equally little chance of a predictable outcome of any major conflict in Europe.

This is partly institutional. No professional military officer, and particularly no officer with the heritage of the devastation of World War II, will willingly trade the ability to win a war for the ability to make one unbearable to the enemy.

NATO's military men are really citizen soldiers: they have no ideological, strategic, or even bureaucratic goals other than ensuring the survival of the soci-

eties of which they are a part. As a result, they inevitably seek forces which offer some hope of preserving their societies even if war occurs. In this sense, West Germany's high command shares the same ultimate goal as its anti-military "greens."

This helps explain the seeming surrealism of so many NATO war games—war games that inevitably end with a sudden termination of conflict by the Soviet Union; that end with the situation left hanging and the Pact on the Rhine; that fight a nuclear war for three weeks using 6,000 weapons only to have the Pact suddenly seek to negotiate; or which desperately try to find out how NATO can sustain 90 days of defense and then ignore what will happen on the 91st.

NATO cannot deal with the trends reflected in the previous tables, however, by trying to meet impossible force goals. They require hard trade-offs and clear priorities. A focus on more antitank weapons, on multiple rocket launchers, on smart area munitions, on standoff air munitions, on new land based air defense systems, and on deep strike systems cannot be layered over existing force plans or the search for 90-day stock levels and high enough logistic and support levels to fight massive and prolonged wars.

There is also a point of diminishing returns in the search for conventional options. There is no practical prospect that NATO can ever rely on conventional deterrence or means to fight prolonged theater-wide conflicts or deal with the full military capabilities the USSR can eventually bring to bear.

This must be done through nuclear deterrence. Thus, the priority is for improvements like the ground launched cruise missile and Pershing II and not for more divisions, wings of aircraft, or the other incredibly costly improvements necessary to raise NATO's present conventional battle fighting capabilities to a level that can deal with another Soviet Shock or Tactical Air Army.

The Uncertainty of Resources

NATO's force improvement problems are further compounded by the problem of NATO resources. NATO defense budgets are now mortgaged to the breaking point. Even in the mid-1970s, NATO lived on capital in the sense that it did not invest enough in new equipment to replace what it consumed. The oil crisis of 1979 and the resulting world depression have made things far worse. Every NATO defense budget is now filled with undercosted programs which eventually must be paid for.

The end result is that NATO cannot possibly afford even its existing force plans with a 3% or 4% real increase in defense expenditures. The kind of force costs reflected in NATO force plans are

as historically unreal as those projected in US defense budgets and show the same widening gap between projected resources and actual costs.

This raises the importance of setting realistic force goals and accepting NATO's strengths rather than emphasizing its weaknesses. The Alliance cannot deal with its arms race unless it can deal in honest costs, budgets, and trade-offs.

This leads to the final barrier that NATO must cross to maintain its strengths and take advantage of its opportunities. NATO politicians are caught in institutional traps of their own. Defense ministers must compete for resources against countless other social needs and do so in a political environment where every need is expressed in terms of artificial crisis.

Any public declaration of reliance on deterrence presents the risk that they will be pushed towards fewer forces and growing reliance on nuclear weapons. Realistic budgets mean fights with one's military and one's treasury on terms no other part of government is willing to use. Domestic programs, after all, are no more honestly costed or defended than military programs.

Further, the Alliance is still politically divided as to how to approach deterrence. The US still tends to pursue conventional war fighting options as a means of avoiding the risk of strategic nuclear conflict. The heritage of World War II has also given the US global military responsibilities that Europe has no desire to assume.

Europe contributes to the problem in its own way. It has a natural motive to avoid increasing its defense effort and collectively shares West Germany's desire to make the risk of nuclear conflict so high that any conflict on German soil will seem as unacceptable as possible.

As a result, Europe has not come to grips with the need to convince its population either that it needs a major conventional battle fighting capability or that NATO is strong enough to keep the peace through an affordable mix of conventional capability and a high threshold of nuclear deterrence.

This failure to set clear and common goals for strengthening deterrence has divided the Alliance since the early 1960s. The US has won European acceptance of stronger conventional forces and options at a policy level but not in terms of resources. At the same time, the US has been internally divided by the fact that its civilian planners have constantly attempted to prove that minor budget increases or reallocations would provide a conventional defense, while its military services have fought for the far higher force levels they feel are necessary.

This helps explain why NATO's political debates often have the same surrealism as its war games. It explains the fact that NATO's hope to maintain 3% annual

increases in real defense expenditure bears absolutely no resemblance to the ability to buy any given level of defense capability and explains why NATO's defense ministers emphasize both war fighting and NATO's weakness.

While NATO's politicians may privately accept reliance on deterrence more willingly than NATO's military planners, the conventional wisdom of democratic politics is that the only way to get a bigger defense budget is to avoid controversy and hard choices and cry wolf instead. As a result, NATO is poorly structured to make hard political choices and has done more to scare its voters than to make the proper resource decisions.

Fortunately for NATO, it can survive its failure to deal with these problems. The Soviet Union faces so many risks and uncertainties in the Central Region that it may never test NATO's capabilities as long as NATO remains politically united. In this sense, NATO is the strongest and most successful defensive alliance in history.

NATO's leaders can also do a great deal even within the present political and financial constraints on the Alliance. Western governments have developed an amazing ability to ignore their more inconvenient force goals and to fail to pay their mortgages.

Survival, however, is not the same thing as security. NATO needs a new realism

about the Central Region balance if it is to create the kind of forces that do most to reduce the risk of any kind of conflict. This, in fact, is NATO's best hope for arms control: not more forces or force reductions, but the right forces to deal with the balance of uncertainty. ■☆☆

Fort Sill Fires MLRS, Deploys It to Europe

THE NEWLY OPERATIONAL Multiple Launch Rocket System (MLRS), made by Vought Corp., was fired in a live demonstration at Fort Sill, OK, in mid-June. Soldiers of C Battery, 3rd Battalion, 16th Field Artillery were the first troops trained as an MLRS battery to actually fire it. C Battery deployed to West Germany shortly after the firing to man the US Army's first MLRS contin-



MLRS

gent in Europe. Plans call for one MLRS battery to support each Army division and an MLRS battalion for each corps.

The firing at Fort Sill capped a week-long field training exercise which began in early June. The MLRS rockets, which normally carry 644 bomblets in their tactical warheads, carried 100 steel pipes as ballast during the practice firing. Previously, MLRS had been fired only at White Sands Missile Range, NM.

The current program, according to Army officials, is for 26 batteries to be equipped with MLRS. In addition to the tactical anti-personnel warhead, a terminally guided submunition version is presently undergoing flight tests. Testing was also scheduled for a chemical warhead as this issue went to press. ■☆☆

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Setting It Straight

In *AFJ's* June preview of the Paris Air Show, we incorrectly identified two photos. On page 65, the photo with a caption about Hunting Engineering Ltd.'s JP-233 airfield attack weapon was, in fact, a picture of Hunting's improved BL-755 advanced airborne anti-armour weapon, now in use with the Royal Air Force. And, on page 66, we featured a picture of the General Electric SNECMA CFM-56 engine, not the F-404-GE-400 as noted. ■☆☆