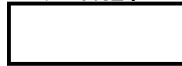


Studies in Intelligence

Winter 1979



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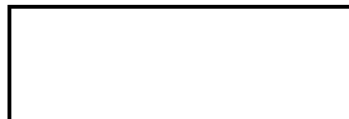
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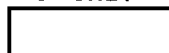
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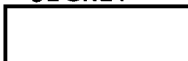
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CONTRIBUTORS TO THIS ISSUE

Major-General Paul F. Gorman (“Measuring the Military Balance in Central Europe”) is the National Intelligence Officer for General Purpose Forces. The most recent of his many field command assignments was as Commanding General, 8th Infantry Division (Mechanized), in Central Europe.

[REDACTED]

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[REDACTED] (“A Plea for Continuity in Intelligence Production”) wrote this swan song after a quarter of a century as an analyst in CIA’s Directorate of Intelligence.

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[REDACTED] (“Before The Farm”) are pen names of recent participants in CIA’s Career Trainee Program.

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David Atlee Phillips (reviewer of Wyden’s “Bay of Pigs”) was chief of CIA’s Latin America operations until he retired to defend his profession as an author and lecturer.

Robert Crowley (reviewer of “The Storm Petrels”) specialized in defector handling during his long career in CIA.

[REDACTED] (reviewer of “A Station in the Delta”) has served in numerous Asian countries, including Vietnam.

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[REDACTED] (“Briefly Noted”) is The Staff of the Historical Intelligence Collection.

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The subject of this article is the Number Two intelligence problem engaging the United States. Specialists in the calculation of the threat posed by the field forces of the USSR and its Warsaw Pact allies will be quick to recognize its importance and will set aside the time necessary to read it; the general reader may need some encouragement.

First of all, not every reader will need to understand nor even to read all of the technical charts and formulae with which the author has paved the course of his argument; most of these are elaborate footbridges essential to the firm footing of the specialist. If some readers find their eyes glazing over as they approach these bridges, the prose at the other side will help them resume the journey with little loss in equilibrium.

Second, non-military analysts will be rewarded for their persistence in reading on by the discovery of a problem within a problem. Those civilians who delight in quoting Clemenceau on the management of war may be moved to engage themselves more deeply in the issue. If so, they can find no better guide than the author, himself a living refutation of the mordant aphorism that "war is too important to be left to generals." His writing is clear, his grasp is firm, his step sure, and his mission worthy and purposeful.

Finally, the reader who perseveres in following this well-lighted labyrinth will arrive at its conclusion a better informed public servant. The truly concerned public servant will be inspired, as the author urges, to master the techniques of force balance assessment essential to dealing with what may become the Number One national intelligence problem of the 1980s.

The Editors

MEASURING THE MILITARY BALANCE IN CENTRAL EUROPE

Paul F. Gorman
Major General, USA

The National Intelligence Officer for Conventional Forces is a misnamed anomaly—not an intelligence officer, but a professional soldier, little experienced in intelligence production, presiding over estimates which include such non-conventional forces as Soviet and Chinese units armed with intermediate-range ballistic missiles or other nuclear or chemical weaponry. I have received mail for NIO/Continental Forces, which title is evocative but elides the naval dimensions of the job. Perhaps the label might be more precisely "NIO for General Purpose Forces." But I concede that much can be said for the colleague who proposed: "NIO for Conventional Notions." *

* Perhaps at the author's instigation, the Director of Central Intelligence redesignated his office "NIO for General Purpose Forces" effective 1 October 1979—Editor.

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The Military Balance

It is at least true that NIO/CF's principal product, National Intelligence Estimate 11-14-XX, *Warsaw Pact Forces Opposite NATO*, is one of the intelligence community's lapidary displays, each gem of data well smoothed and polished by interagency tumbling, in a Benvenuto Cellini setting of prose. Yet most Directors have found exploration of NIE 11-14 onerous, even tedious. "What does all that divisions stuff mean? What does it all add up to?," more than one has asked in exasperation. The answer to that question remains most unsatisfying. Here follows one of those chutzpah exercises now chic in Washington—the apprentice presumes to instruct.

In the first place, none of the NIEs in the 11-14 series address directly the military balance, that is, assess the equilibrium or disequilibrium of forces. They have not judged "who is ahead?," as have NIEs of the 11-3/8 series, treating the strategic balance. Hence, NIE 11-14 offers no direct answer to questions usually put to the Director by members of Congress who seek comparative rankings—superiority, parity, inferiority—of the sort to which the SALT debates have accustomed them. Rather, over the past decade the NIEs 11-14 have concentrated on describing those land, sea, and air forces which might figure in Soviet combat operations, and estimating their capabilities. NIE 11-14-71 (9 September 1971), *Warsaw Pact Forces for Operations in Eurasia*, dealt, *inter alia*, with the Soviet Union's allocation of forces among its commitments to the Warsaw Pact and its military requirements along its border with China. The next major revision, NIE 11-14-75 (4 September 1975), entitled *Warsaw Pact Forces Opposite NATO*, focused more specifically on Soviet capabilities for military operations within Central Europe.

The latest document in the series, NIE 11-14-79 (31 January 1979), bears the same title as its predecessor, and preserves its narrower focus. I would judge the 1979 version better presented than its predecessors—it is assuredly more graphic; there seems to have been a great deal of effort expended on summarizing and portraying data in forms meaningful to the uninitiate; and there is an excellent section describing how the Soviets might launch a conventional attack in Europe. But despite the attempts of some of the intelligence community to have NIE 11-14-79 essay an explicit comparison between Warsaw Pact and NATO's military capabilities, **DIA and the military services blocked any inclusion of what they term "net assessment," and the NIE is therefore mute on the question basic to most policy issues: How does the Warsaw Pact stack up militarily against NATO?**

CIA has tried its hand at an answer. In August 1977 the Directorate of Intelligence published a paper by James O. Carson of OSR on *The Balance of Forces in Central Europe*.¹ Carson reassured that:

The balance of military power in Central Europe—especially as it contributes to deterrence there—is not fragile. NATO's military deterrence is multifaceted, being based on conventional forces as well as tactical and strategic nuclear weapons. A shift in the military balance great enough to significantly reduce deterrence in Europe would require achievement of a major technological breakthrough by one side or a major shift in numerical force ratios.

He went on to warn, however, of a gradually shifting balance as the Soviets overcame their technological inferiority and modernized their numerically superior forces, with potentially serious consequences:

The most serious results of the shift in the balance of forces in Central Europe could arise from both sides' perception of that evolving balance.

¹SR 77-10100, August 1977, SECRET.

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There is a growing but largely unsubstantiated impression in the West that the vigorous, ongoing Soviet modernization effort constitutes a major conventional arms buildup which has caused the balance to shift radically . . . should it become widely accepted that the balance has dramatically shifted, this view could depress NATO confidence and in turn increase Soviet assertiveness. Such a development could ultimately increase the risk of war through Soviet miscalculation.

One European who perceives such an alarming shift in the balance is the Belgian general, Robert Close, who in his 1977 book, *L'Europe Sans Defense*² wrote:

For years, Europe was content to rely on American protection guaranteed by monopoly of the supreme weapon and the nuclear shield.

This reassuring situation is a thing of the past now that thermonuclear parity has become a reality and mutuality immobilizes and paralyzes the nuclear arsenals of the two superpowers.

As a result, conventional forces have reassumed their full importance. The overwhelming Soviet superiority gained by constant qualitative and quantitative improvement confirms a definite shift in the balance of forces, the guarantor of an uneasy peace at a time when competition between the two opposing systems continues without respite, in spite of "detente" to which we hear daily reference.²

Similar views have been expressed by General Sir John Hackett (who has NATO forces fight a successful conventional defense in his *World War III*, but his "future-history" is predicated on NATO's moving vigorously in the early 1980s to redress a shifting balance), and Admiral of the Fleet Sir Peter Hill-Norton (in *No Soft Options* Hill-Norton sees public misconceptions of even "purely factual" NATO issues like the balance of conventional forces as cause for lack of political will to translate NATO's demographic and economic advantages into resources for deterrence, forward defense, and detente).³

The point is not whether lots of new Russian tanks make West Europeans nervous, or whether speculations about how the Soviets might use their growing conventional advantage are well-founded, but simply whether, with such huge American stakes at play in a game of perceptions, **the U.S. intelligence community ought seriously to consider addressing squarely the potential source of misperception, and to produce a national intelligence estimate of the military balance.**

Congress is looking for such an estimate. No Senator or Representative preparing to vote on U.S. appropriations for the defense of NATO is likely to be content with a one-sided description of Warsaw Pact capabilities. All are aware that in gross resources

² Close, General Robert, *L'Europe Sans Defense*?, Editions Arts & Voyages, Paris, 1976 (issued 1977). Available in English from U.S. Joint Publications Research Service, JPRS L/7120, 12 May 1977. Quote is from latter, p. 243.

³ Hackett, General Sir John Winthrop, *et.al.*, *The Third World War: A Future History*, London, 1978. Hill-Norton, Adm. Sir Peter, *No Soft Options: The Political-Military Realities of NATO*, Montreal, 1978, who quotes Clausewitz:

The possession of military or economic power is only of value if supported by political will and the readiness of the people to provide the means to defend their way of life and conception of democracy.

Cf., Howard, M., "The Forgotten Dimensions of Strategy," *Foreign Affairs*, July 1979, pp. 975-986.

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NATO is far stronger than the Pact: 200 million more people, 3 times the GNP, 70% higher GNP per capita. Is there a genuine need for American manpower and money to buttress NATO? Of course intelligence community witnesses before Congressional committees inquiring into such questions can duck being responsible for "net assessment," deferring to the Department of Defense or the JCS for treatment of the military balance in Central Europe. But to demur is not to escape criticism. In fact, any intelligence officer who forays into a discussion of Warsaw Pact forces, on the Hill or elsewhere among policy makers, should anticipate taking knocks for our intelligence estimates, and being identified as probable cause for future insufficiency in U.S. policy.

Much has been published by the gemmating staffs of the U.S. Congress on these issues. For example, the Congressional Budget Office has published an information booklet "Assessing the NATO/Warsaw Pact Military Balance,"⁴ an inquiry into methodology, based on a comprehensive review of unclassified sources. This monograph argues that past estimates of the balance have been tilted toward "optimism" or "pessimism." Without singling out any intelligence agency, the authors perceive a "new pessimism" in vogue, part of a long-standing cycle of optimism-to-pessimism, reflecting current events and U.S. responses.

One of the authors cited in the CBO study, and one of the leading American commentators on the NATO/Warsaw Pact Military Balance, is also a Congressional staffer: John M. Collins, a retired military officer, now strategic analyst for the Research Staff of the Library of Congress, who has published comprehensive studies of the NATO Pact balance (for example, his *American and Soviet Military Trends*,⁵ and his *Imbalance of Power*).⁶ Generally speaking, Collins' technique seems to be to inform himself from finished intelligence, but then to use relevant unclassified data to generate comparative data on selected measures of current military forces, and to depict trends pertaining thereto. At Figure 1 are some graphs from his *Military Trends*.⁷ In the same publication, Collins develops a sort of balance sheet between the United States and the Soviet Union, leading to a "standing" for 1970 and 1977 respectively.⁸ (Table I.)

Anthony Cordesman, former Assistant to the Deputy Secretary of Defense and Secretary of the Defense Intelligence Board, wrote the preface and summary—termed a "net assessment appraisal"—for Collins' recent book, *Imbalance of Power*, in which he points out that Collins labored under grave difficulties from the lack of objective intelligence. As far as Cordesman is concerned, Collins' *bete noir* is the Defense Intelligence Agency which, in his view, "has been the key link in shaping all free world estimates of Soviet forces... DIA tends to credit the Soviet Union with capability when it does not know, and has a long tradition of providing answers

⁴ CBO, *Assessing the NATO/Warsaw Pact Military Balance*, (Budget Issue Paper for FY-79), GPO, Washington, December 1977. N.B: The CBO authors, James Blaker and Andrew Hamilton, who worked for John E. Koehler, point out that (p. xvii) "the brighter assessments are optimistic only in comparison with the more pessimistic ones. Few if any of the numbers or ratios used in them demonstrate a clear NATO advantage. They do, however, suggest a closer balance...."

⁵ Collins, John M. *American and Soviet Military Trends*, the Center for Strategic and International Studies, Washington, D. C., 1978. Cf., Collins and Chivat, J.S., *The United States/Soviet Military Balance*, Library of Congress, Jan. 27, 1976.

⁶ Collins, J. M., and Cordesman, Anthony, *Imbalance of Power*, Presidio Press, San Rafael, California, 1978.

⁷ Collins, *Trends*, p. 118

⁸ *Ibid.*, pp. 359-361.

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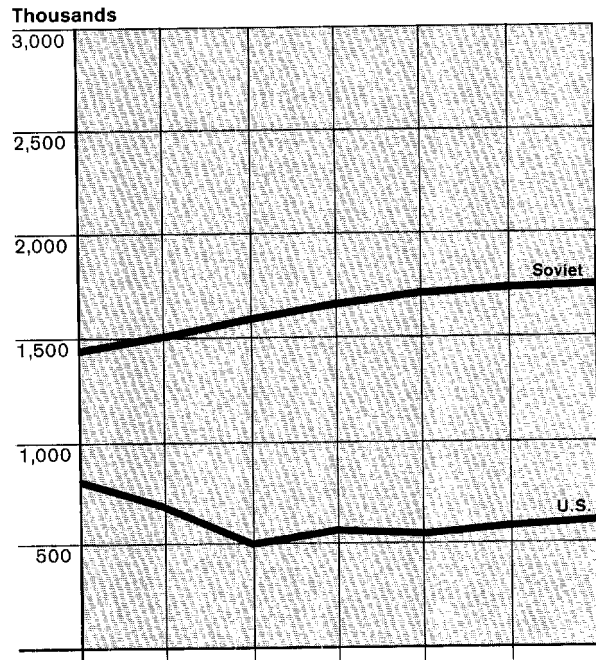
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Selected Ground Force Strengths Compared
Statistical Summary (Note Different Scales)

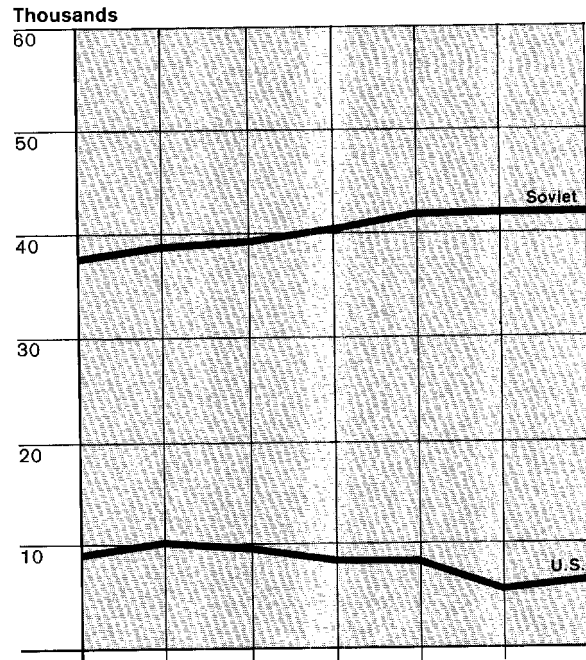
Figure 1

Adapted from Collins, J.M.
American and Soviet Military Trends
Washington, 1978

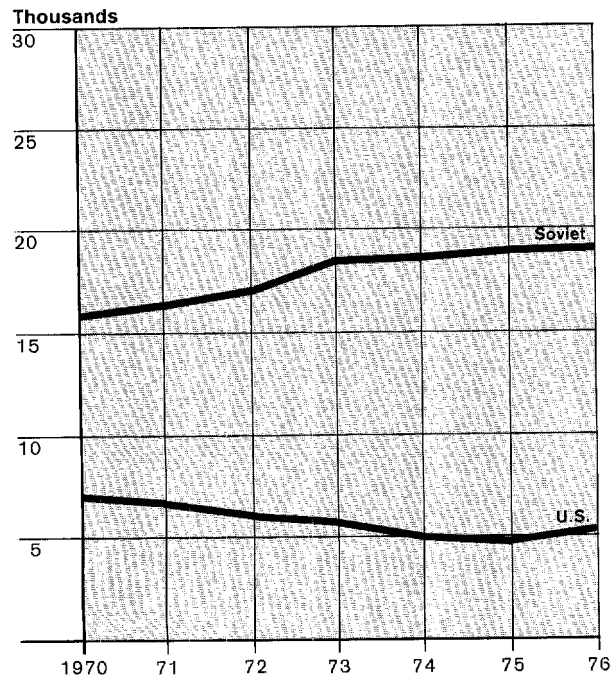
Deployable Manpower



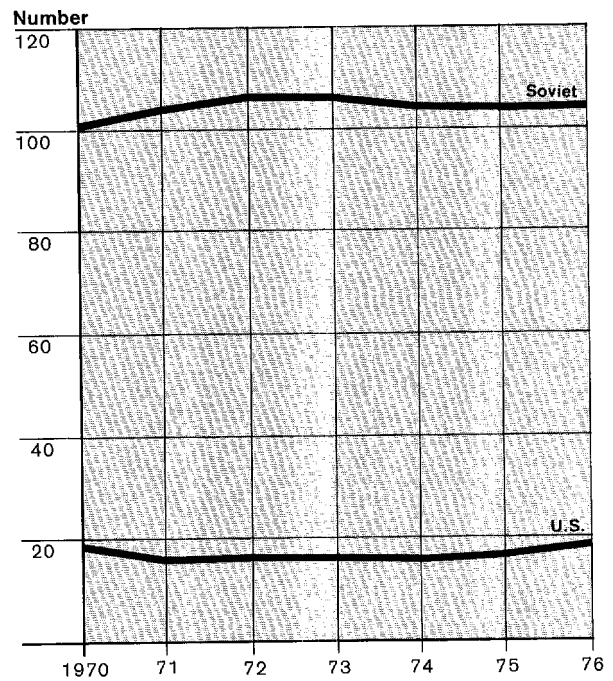
Medium Tanks



Field Artillery



Ready Divisions



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Table I

	1970 ^a			1977 ^a		
	NATO	Warsaw Pact	NATO Standing	NATO	Warsaw Pact	NATO Standing
Personnel ¹	1,523,300	1,190,000	+ 333,000	1,409,000	1,600,000	- 191,000
Divisions ²						
Committed ³						
Armor	8	24	- 16	8	24	- 16
Other	22	28	- 6	28	26	+ 2
Total	30	52	- 22	36	50	- 14
Ready Reinforcements ⁴						
Armor	2	14	- 12	2	10	- 8
Other	10	7	+ 3	10	6	+ 4
Total	12	21	- 9	12	16	- 4
Sub-total	42	73	- 31	48	66	- 18
First-line Reserves ⁵						
Armor	2	2	par	2	6	- 4
Other	11	13	- 2	11	18	- 7
Total	13	15	- 2	13	24	- 11
Total Divisions	55	88	- 33	61	90	- 29
Medium Tanks ⁶	6,535	14,500	- 7,965	7,400	22,000	- 14,600
Tactical Aircraft ⁷						
Bombers	15	100	- 85	185	100	+ 85
Ground Attack	1,640	800	+ 840	1,500	800	+ 700
Interceptors	470	1,600	- 1,130	400	1,700	- 1,300
Total	2,125	2,500	- 375	2,085	2,600	- 515
MRBM/IRBM	0	650	- 650	0	550	- 550

¹ Personnel strengths are active forces only for U.S./NATO, but include Soviet Category III divisions.

² U.S., West German, and Soviet divisions have increased in size since 1970. Three German divisions, for example, had only two brigades each at that time. All 12 now have three brigades. The British Army has the same total number of brigades as in 1970, but has added a division headquarters.

These charts do not reflect NATO's increased strength in separate brigades and regiments, which are included in some computations as "division equivalents." The IISS *Military Balance, 1977-1978*, for example, shows 27 NATO divisions (excluding France), including 10 armored divisions, by counting division equivalents (3 brigades-1 division).

³ U.S./NATO committed divisions include all active divisions in NATO's center sector. SOVIET/Warsaw Pact counterparts are limited to divisions in East Germany, Czechoslovakia, and Poland. All are Category I.

⁴ U.S./NATO ready reinforcements include all other active U.S. Army divisions, less one in Korea; two U.S. Marine Corps Amphibious Force (MAF) division/wing teams; six French divisions; and one British division in the U.K. Soviet lists are restricted to Category I and II divisions in the Baltic, Belorussian, and Carpathian Military Districts. There are no satellite state divisions in this class.

⁵ U.S./NATO first-line reserves include one active U.S. Army division; two U.S. Marine MAFs; all eight U.S. National Guard divisions; and one Dutch reserve division. Warsaw Pact forces are Category III divisions, including those in the Baltic, Belorussian, and Carpathian Military Districts of European Russia. Every U.S. division, active and reserve component, is shown. The Soviet Union has 112 others, some Categories I and II. Many of those would be available for service in Central Europe if a crisis arose.

⁶ U.S./NATO medium tank statistics include U.S. prepositioned stocks in unit sets (POMCUS), war reserve stocks (PWRMS), plus 130 in divisions that serve as maintenance float. The number of Warsaw Pact reserve stock tanks is not ascertainable.

⁷ Aircraft statistics exclude U.S. dual-based forces in CONUS.

⁸ NATO and Warsaw Pact comparisons include the United States and Soviet Union. French Army and Air Force totals are included in all categories, even though those forces are not under NATO control and only two divisions are deployed in Germany.

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whether it has sufficient data or not. It also has a tendency to mirror-image Soviet capabilities against those of U.S. forces or technology when it lacks actual intelligence, without indicating that such mirror-imaging is the actual source of its estimates. And these tendencies are compounded by other problems which affect the validity of intelligence estimates:

1. Both military and civilian bureaucracies need high estimates of the threat to justify force levels, new weapons, and defense research. With some exceptions, most users of intelligence want high estimates of the threat.
2. Intelligence officers are compartmented specialists. They often lack practical experience with the real world problems in the threat forces they describe. They lack the background and training to judge what might go wrong with threat forces and plans.
3. Few intelligence officers have extensive training in measuring military effectiveness. They are not familiar with test and evaluation techniques, historical research on weapons or force effectiveness, or operations research. They usually are prevented from comparing U.S. and foreign systems by informal pressures from the Joint Chiefs, the service staffs, or civilian decision makers.
4. Intelligence officers are rarely required to compare U.S., Allied, and threat forces directly. In general, they generate data using different standards, measurement methods, assumptions, and definitions from United States forces data. These differences often lead to estimates which disguise biases in favor of threat forces. Such biases include exaggerated estimates of threat sortie rates, kill probabilities, rates of fire, readiness, circular errors of probability, system reliability, mobilization and build-up rates, and munitions stocks.
5. DIA evolved from service intelligence branches with a tradition that intelligence counted the strength of the threat and estimated its location, but did not judge its comparative tactical and military effectiveness. This was partly the result of pressures by the more prestigious plans and operations branches of the military services and the Joint Staff to cause the intelligence branches to stay away from estimates reflecting on U.S. capabilities. Accordingly, in spite of recent major efforts at reform, intelligence still tends to concentrate too much on enemy order-of-battle and technical performance of threat equipment, and to pay too little attention to threat training, build-up capability, tactics, operations and maintenance and similar "soft" factors.
6. In contrast, many intelligence officers have personal experience with our allies. They see them (warts and all) and often with more than a touch of American parochialism. Many intelligence users also have no incentive to seek high estimates of Allied capability. The justification for U.S. programs is as much the lack of Allied capabilities as the presence of threat capabilities. This leads to an inverse tendency of U.S. intelligence to underestimate Allied capabilities.
7. Estimates of threat capabilities are increasingly dependent on estimates of technology and weapons systems performance. Many aspects of weapons performance are, however, not even theoretically visible or detectable through intelligence sources. For example, it is extremely difficult to estimate factors like reliability, mean time between failures (MTBF), and

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The Military Balance

equipment availability rates even for U.S. systems until they are proven in war. Few weapons have ever approached their estimated or theoretical technical performance capability in actual combat, yet experts continue to act as if the "next" system would behave without problems.

- 8. Users have demanded and received intrinsically impossible estimates of threat capabilities which go far into the future, or into unknowable areas of speculation. The Office of Defense Research and Engineering, for example, has forced DIA to make predictions of Soviet capability that go so far into the future where it is unlikely the Soviets have such plans. Since the only data available are U.S. plans or capabilities, DIA is forced to "mirror image." It is not surprising that the intelligence officers forced to do such work have tended to make guesses which maximize threat capabilities.
- 9. These tendencies are compounded when intelligence estimates threat capabilities for future years. These involve the greatest areas of uncertainty and are most subject to the tendency to assume high capability in the absence of concrete knowledge. This is why estimates of trends in Soviet forces tend to be so bleak. The enemy we know is invariably preferable to the enemy we will know.⁹

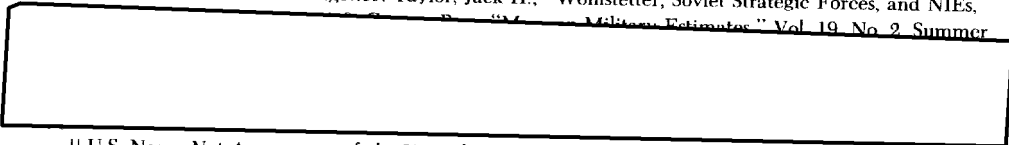
Some of Cordesman's critique appears to be cogent, and I suppose most DIA analysts would plead guilty to at least one or two of his charges. But to be fair to DIA, we should be clear that, if it lurks Cyclops-like in a narrow estimative cave, it does so because of the DoD and JCS Olympians who set bounds on its nature, and direct its destiny. More to the point, if DIA's monocular vision has distorted the prowess of Soviet conventional forces, it has done so not by magnification, but by diminution. Over the years, DIA has probably *understated* capabilities of Soviet conventional forces.

The reader may recall earlier articles in this journal which drew attention to the intelligence community's persistent underestimation of Soviet strategic forces.¹⁰ There is a growing body of evidence that a similar lacuna exists vis-a-vis Soviet general purpose forces. For example, the U.S. Navy's latest *Net Assessment of the United States and Soviet Navies*¹¹ shows that the principal DIA document setting forth estimates of future Soviet naval forces, the Defense Intelligence Projections for Planning (DIPP), underestimated in its projections the assessed Soviet order-of-battle for any given year over the past eight. On page 9 are three of the charts used in NA 78.

It is doubtful that a comparable analysis of DIPP land force projections would disclose a similar gap with assessed Soviet land force order of battle over the last ten years, simply because the DIPP has been counting mainly manpower and divisions. In 1975 OSR published an analysis pointing to qualitative changes in Soviet Theater Forces which were affecting the balance.¹² Philip A. Karber of the BDM Corporation,

⁹ Cordesman, *Imbalance of Power*, xv-xvii.

¹⁰ Cf. CIA, *Studies in Intelligence*: Taylor, Jack H., "Wohlstetter, Soviet Strategic Forces, and NIEs," *Studies in Intelligence*, "Military Estimates," Vol. 19, No. 2, Summer



¹¹ U.S. Navy, *Net Assessment of the United States and Soviet Navies* (U) (NA-78), Vol. 1, Chapter 5, "Uncertainties in Projections," pp. 50-51.

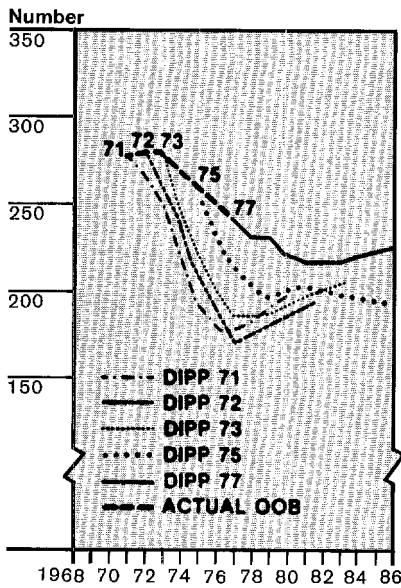


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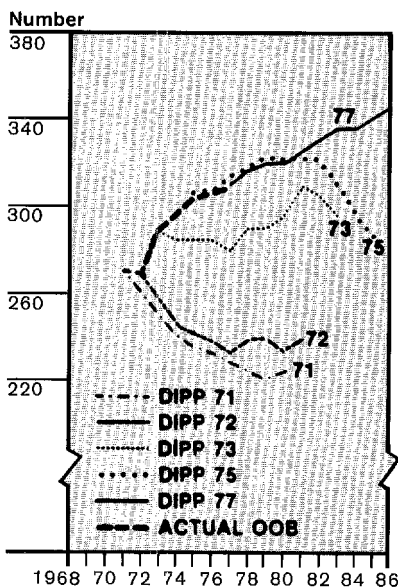
Figure 2

Soviet General Purpose Submarines



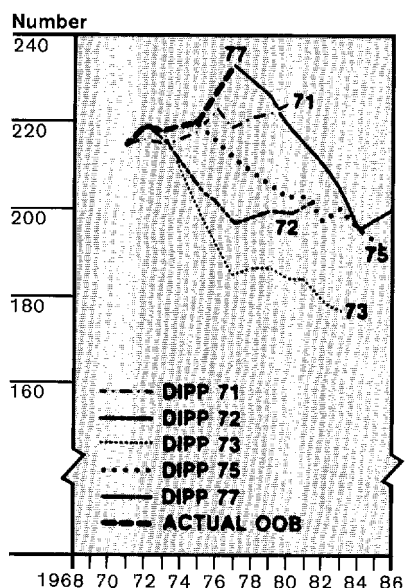
This figure shows the number of general purpose submarines projected in DIPP-71, DIPP-72, DIPP-73, DIPP-75, DIPP-77. In each successive projection there has tended to be a sizable increase in the number projected for any given year, although the actual totals do indicate the downward trend in numbers noted previously in this report.

Soviet Navy ASM Bombers



This figure shows the number of ASM bombers projected for the Soviet naval air arm in DIPP-71, DIPP-72, DIPP-73, DIPP-75, and DIPP-77. Once again, successive projections have tended to increase the number projected for any given year. However, in this case, the actual totals indicate a strongly increasing trend.

Soviet Principal Surface Combatants



This figure shows the number of Soviet principal surface combatants projected in DIPP-71, DIPP-72, DIPP-73, DIPP-75 and DIPP-77. In DIPP-72, there was a major change in the estimate, to a rapidly decreasing force size. DIPP-73, DIPP-75 and DIPP-77 continue to project a rapid decline, but delay the start. It is interesting to observe that the actual totals have been in fairly good agreement with the original DIPP-71 projections.

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in contract studies for DoD, subsequently pointed out that division/manpower counts failed, *inter alia*, to identify modernizing Soviet combat service support systems. Moreover, Karber and his colleagues, in a study published in February 1978 entitled *Trends in the Central European Military Balance*,¹³ noted that over the dozen years from 1965 to 1977 intelligence estimates had perceived relatively little change in the commonly used measures of the NATO/Warsaw Pact balance.

But significant change there had been. To inquire into both qualitative and quantitative differences among weapon systems and units on both sides, Karber assigned to each numerical indices of effectiveness—weighted effectiveness indices, or WEI, and weighted unit values, or WUV (which shall be explained in detail in the following pages)—which are widely used to assess land force balances in DoD analyses, particularly those of the U.S. Army. Thus measured, important new Warsaw Treaty Organization (WTO) capabilities, the product of burgeoning Soviet military technology, became evident:

In the last 12 years both alliances have greatly increased their theater equipment inventories and significantly upgraded the quality of their deployed weapon technologies without altering the personnel and division balances to any great extent. . . . Although there is evidence of substantial growth for both alliances, the Warsaw Pact quantitative increases exceed those of NATO in every category except light tanks and armored personnel carriers. The Pact has particularly widened its quantitative advantage in tanks, anti-tank guns, artillery, and multiple rocket launchers and has decisively overcome a NATO advantage in anti-tank guided missiles (ATGMs) held in 1965. If quantitative and qualitative trends are combined (using WEI/WUV), the growth of Warsaw Pact forces relative to NATO is more dramatically apparent. The weapons systems ratio for 1977 reflects a Warsaw Pact lead in all weapon categories. . . . While NATO technology was generally superior to that of the Warsaw Pact in 1965, today the Soviets have generally achieved qualitative parity in deployed system technologies and in some cases have technology superior to that currently deployed by NATO. . . .¹⁴

Reproduced on page 11 is the summary table from the Karber study (Classified SECRET).

This past spring, a study conducted by the Office of the Assistant Secretary of Defense for Program Analysis and Evaluation used a similar WEI/WUV methodology to compare future programs of NATO force modernization with projected Soviet/Warsaw Pact modernization, and reached conclusions that in the mid-80s the capability gap between conventional forces of the two coalitions facing each other in Central Europe will narrow, but that at least some NATO allies will lose ground vis-a-vis threat forces.¹⁵ In Table III on page 11, the Warsaw Treaty Organization's improvement in firepower is measured in "armored division equivalents" (ADE), a WUV score of weighting which uses the U.S. Armored Division as standard. (The WTO forces include Soviet divisions stationed in East Europe or available in West Russia, and non-Soviet Warsaw Pact—NSWP—divisions of Poland, Czechoslovakia, and East Germany.)

¹³ Karber, P. A., Whitley, G. A., and Komer, D. R., *Trends in the Central European Military Balance: Quantitative and Qualitative Change in the Ground Forces of NATO and the Warsaw Pact Alliance*, The BDM Corporation, McLean, Virginia, February 1978. Classified SECRET. Also, Karber, *et al.*, *Net Assessment of the Maturing Soviet Threat in Ground Forces* (U), 12 October 1976 (Net Assessment Project 186-Phase III), (BDM Corporation), SECRET.

¹⁴ *Ibid.*

¹⁵ OASD/PA&E, *NATO Center Region Military Balance Study, 1978-1984*, July 13, 1979, Classified SECRET, pp. 6-7.

Table II
Change in Major Theater Weapon Inventories
 (Active Units 1965-1977)

Type of System	WTO Percentage Change		NATO Percentage Change		WTO/NATO Ratio	
	Quantity	WEI Quantity/Quality	Quantity	WEI Quantity/Quality	(Quantity + Quality) 1965	1977
Tanks	30	45	12	26	2.2 to 1	2.5 to 1
Light Tanks	—	-2	44	73	0.9 to 1	0.5 to 1
Armored Personnel Carriers	42	90	44	63	1.1 to 1	1.3 to 1
Antitank Guided Missiles	625	908	300	587	1.1 to 1	1.6 to 1
Antitank Guns	70	39	-33	32	1.5 to 1	1.6 to 1
Light Antitank Weapons	28	131	26	2	0.6 to 1	1.3 to 1
Artillery	58	78	32	49	1.4 to 1	1.7 to 1
Multiple Rocket Launchers	50	145	*	**	—	7.2 to 1
Mortars	8	50	4	5	0.5 to 1	0.8 to 1

* Quantity increased from 0-to-176 between 1970-1977.

** Quantity/Quality increased from 0-to-12,403 between 1970-1977.

Table III
Trends in Warsaw Pact Force Modernization

	ADEs		
	1978	1984	% Increase
Soviet	50.5	60.1	19%
NSWP	20.4	23.8	17%

“The Pact’s modernization effort is expected to include all major types of weapons in Soviet and East European ground forces. As a result, the Pact forces in the mid-1980s will have increased capability for combined arms operations against NATO.”¹⁶ The study then goes on to point out that projected modernization of NATO forces in the same time frame will be asymmetric, with wide differences in effectiveness developing among the allies:

Table IV
NATO Force Modernization (ADEs)¹⁷
 (1978-1984)

	1978	1984	Increase	% Increase
U.S.	6.5	8.6	2.1	33%
FRG	10.7	12.8	2.1	20%
UK	3.4	4.1	.7	18%
France	3.0	3.5	.5	17%
Netherlands	2.7	3.1	.4	15%
Belgium	1.94	1.96	.2	1%
Canada209	.276	.067	32%
Denmark	2.03	1.99	-.04	-2%

These differences are the more striking when WEI for specific weapon systems are compared: (Table V, next page).

¹⁶ *Ibid.*, p. I-7, Classified SECRET.

¹⁷ *Ibid.*, p. I-13, Classified SECRET. Negative values in this and the following table mean that modernization has cost so much that less firepower is afield, a better quality of arms notwithstanding.

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Table V
Modernization of Major Firepower¹⁸
(In-Place Forces)

	U.S.	FRG	UK	France	Neth.	Belgium	Denmark
Armor							
1978	2.56	4.37	.96	.98	.94	.48	.45
1984	3.14	5.45	.93	1.29	1.1	.43	.43
% Increase	23%	25%	-3%	31%	17%	-11%	-4%
Artillery							
1978	.53	1.93	.44	.52	.62	.26	.54
1984	.93	2.3	.49	.59	.62	.26	.52
% Increase	75%	10%	11%	13%	0	0	-2%
Anti-Armor							
1978	1.60	1.59	.41	.27	.28	.37	.09
1984	2.73	1.69	.76	.68	.41	.43	.17
% Increase	70%	7%	85%	152%	46%	16%	89%
Total Increase	2.1	1.8	.4	.8	.3	.07	.03
% Increase	45%	17%	23%	46%	15%	6%	3%

The purpose of the OASD/PA&E study was to inquire into the need for revised NATO programs, particularly those calling for earlier arrival of more U.S. reinforcements. Based on the WEI/WUV comparisons, the study concluded that NATO requires both substantial force modernization by all members and full funding of the U.S. program to preposition stocks of unit equipment in Europe and otherwise provide for swift deployment of reinforcements (Figure 3, opposite).¹⁹

Note that the difference between Curve B and Curve C is another portrayal of a potential "gap" in capabilities—still another measure of a shifting balance—which might develop if either (1) the U.S. Congress failed to appropriate funds for DoD NATO programs, or (2) our NATO allies failed to live up to their modernization commitments implicit in the newly adopted Long-Range Defense Plan, or (3) both shortfalls materialize.

So "balance of forces" is a most serious intelligence problem, one for which our traditional analytical frame of reference and usual technique has been largely irrelevant. There seem to be three principal questions or issues involved:

1. Whether the intelligence community should assess the military balance in Central Europe.
2. If so, how to weigh the military forces involved.
3. Most important, how to present the assessment to the policy maker.

ISSUE I: Assess the Military Balance?

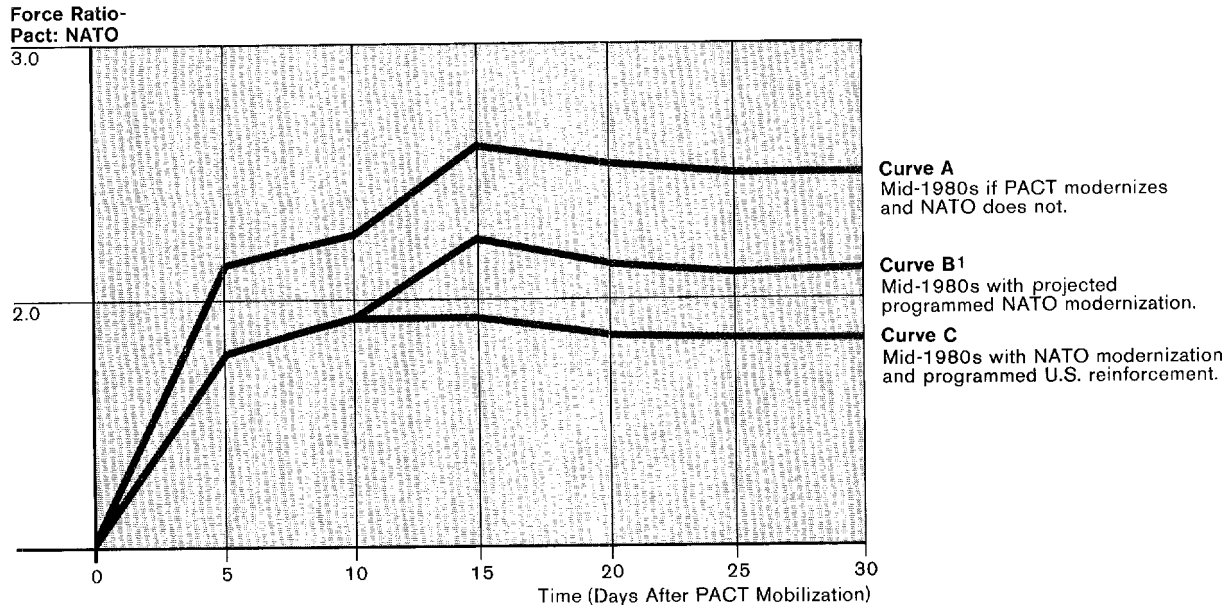
It is important to understand the depth of resistance in DIA and the military services to launching on any course which might lead U.S. intelligence to render judgments on U.S. forces, which is plainly the prerogative of the commanders concerned. While military intelligence feels free to participate in National Intelligence Estimates which assess wholly foreign military balances—even when, as in the Arab/Israeli balance, substantial amounts of U.S. arms figure—they have steadfastly

¹⁸ *Ibid.*, p. I-15. Classified SECRET.

¹⁹ *Ibid.*, p. I-20. Classified SECRET.

Pact-to-NATO Force Ratios (Based on ADEs) 1984

Figure 3



¹ Curve B for 1984 is nearly equivalent to the curve for 1978. The difference between Curve B and Curve C thus represents NATO's net gain in 1978-84.

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refused to join in any comparable assessment in which U.S. forces are significant. But surely military intelligence carries its aversion to "net assessment" too far. I recently asked a DIA office to update a chart plotting, over time, thickness of frontal armor on Soviet tanks against penetrating power of U.S. antitank weapons, but was told that the office had no access to "blue data" and that such "net assessment" was beyond its charter. I find it difficult to believe that anyone trying to analyze Soviet tank design can do so competently without data on the U.S. weapons which the Soviet tanks are built to confront—preferably Soviet data, but in its absence, our own. I find it similarly hard to credit estimates of Soviet theater capabilities from analysts uninformed of those of NATO. Having helped write over the years numerous policy papers for which intelligence provided "input," usually "red" data of stipulated kinds and amounts, I suggest that commanders, operators, and planners can as readily input "blue" data for purposes of National Intelligence Estimates. Noting that they have already been doing so for NIE 11-3/8, the strategic estimate, I urge that it is now time to extend the practice to NIE 11-14, given these policy issues, each of which requires assessing the balance:

- Nuclear parity, and concomitant renewed importance for "conventional" strategies.
- U.S. commitment to the NATO Long Term Defense Plan.
- Needs for modernizing NATO conventional forces, despite foreseen economic and demographic strains.

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- Requirements for modernizing NATO's Long Range Theater Nuclear Force.
- Extension of U.S.-Soviet bilateral arms limitation talks to Theater Nuclear Forces.
- Multilateral arms limitation negotiations, notably MBFR (Mutual Balanced Force Reductions)
- U.S. objective of limiting arms transfers to the Third World.

ISSUE II: How to Weigh?

Selection of measurements for assessment of the military balance in Europe is not easy. Gross measures like ratios of manpower, Gross National Product, or even numbers of divisions on each side conceal as much as they reveal, given contrasts in the social systems and military structures. For example, expressing force ratios in terms of raw numbers of divisions is hazardous, so elusive is the term "division." James Carson of OSR, recognizing that "beancounting" involves accounting for "beans" of different shapes and sizes, used this table (Table VI, page 15).²⁰

To illustrate the analysts' risk in the absence of reliable "blue" data I point out that I took command of one of the two U.S. mechanized divisions in Germany in July 1977, one month before Carson's paper appeared. The numbers for the division should have included:

8th Infantry Division (Mech)	
Medium Tanks	392
Cobra-Tow	42
Major AT Weapons	574

The significance of the corrected numbers is that they might have affected one of Carson's key measures of the balance, ADE (armored division equivalent), which is computed "by combining the unit's total number of ground combat weapons and the quality of each weapon in terms of firepower, mobility, and survivability." As Carson notes, thus counted, the overall NATO position looks better, more "optimistic:"

The resulting application of ADE scores to major NATO and Pact combat units . . . yields the Pact a 1.7 to 1 numerical advantage in ADEs over NATO as opposed to a 2.3/1 advantage in numbers of divisions.²¹

There is no reason worth considering why an OSR analyst struggling with such a calculus should not have access to the latest and best count of "blue beans."

On the face of it, ADE, or other WEI/WUV scoring, seems to promise a straightforward way of counting those "beans," and thus assessing the balance. But there are major limitations to this method.

WEI (weapon effectiveness indices) are lineal descendants of the firepower scores the U.S. Army has used for tactical force comparison since at least the 1941 Louisiana maneuvers. Each WEI is essentially a weighted sum of the dominant characteristics

²⁰ SR 77-10100, p. 7.

²¹ *Ibid.*, p. 7-8. Generally speaking, application of weighting techniques has the effect of presenting a lower force ratio—but not necessarily so.

Table VI
Soviet, West German, and US Divisions ¹

	Soviet Tank Division	West German Armored Division	US Armored Division	Soviet Motorized Rifle Division	West German Mechanized Division	US Mechanized Division
Personnel	9,500	24,000	15,400	12,200	24,600	15,600
Medium Tanks	325	315	324	266	278	270
Other Armored Vehicles ²	249	715	968	460	777	1,029
Artillery ³	78	88	66	90	88	66
AAA Weapons ⁴	173	121	120	206	121	120
Major Antitank Weapons ⁵	15	50	225	63	61	270

¹ Personnel and equipment strengths are estimated model wartime strengths; actual wartime strengths vary from division to division.

² All tracked, armored vehicles, including light tanks and excluding engineer vehicles.

³ Includes guns and multiple rocket launchers.

⁴ Guns and missiles, including Redeye and SA-7 Grail.

⁵ Guns and missiles with a range of 1,000 meters or more, excluding missiles mounted on personnel carriers.

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for a particular weapon.²² WEI express relative value or prowess within nine categories, or families, of weapons.²³ For any particular category, e.g., tanks:

$$WEI = c_f F + c_n M + c_s S$$

where

F is firepower, M mobility, and S survivability and C_f , C_n , and C_s are judgmentally assigned coefficients (constants) expressing relative weighting.

For example, one formulation of WEI_{tank} , arrived at by Delphi techniques polling military professionals (U.S. soldiers tend to emphasize firepower over other capabilities) produced these values for C_f , C_n , and C_s :

$$WEI_{\text{tank}} = .60F + .15M + .25S.$$

In turn, F_{tank} is calculated by arbitrarily designating a value of a standard tank (e.g., M60A1 or T-55) and then judgmentally quantifying on a scale of 0-1 seven factors comparing the standard with any other tank; for example its:

- lethality (Pk)
- ammunition type available (A)
- basic load (BL)
- auxiliary weapons (W)
- time to fire (FM)
- night capability (NF)
- stabilization (P)

Then F_{tank_n} , any given tank, is a function of the sum of the ratios of the characteristics of that tank and the standard tank, Tank_s , computed for example, per this formula:

$$F = .59 \frac{P_{k_n}}{P_{k_s}} + .13 \frac{FM_n}{FM_s} + .10 \frac{BL_n}{BL_s} + .07 \frac{W_n}{W_s} + .06 \frac{A_n}{A_s} + .03 \frac{NF_n}{NF_s} + .02 \frac{P_n}{P_s}$$

Similarly complicated formulae are used to compute M and S, the mobility and survivability indices.

Here are some actual WEI for various tanks, normalized to the U.S. M60A1:

U.S. M60A1	1.00	USSR T62	1.17
U.S. M60A3	1.14	USSR T72	1.37
FRG Leopard II	1.34	USSR T80	1.46
UK Chieftain	1.28		

The WUV (weighted unit value) aggregates WEI for the arms within given units, weighting the contribution of each weapon to the unit's overall combat worth. Again, judgmentally derived weighting figures heavily. Here are some typical weightings assigned to category or weapon family; note that these differ by mission, and by theater (reflecting differing utility of armament in the several environments):

Table VII

Category	Europe			Asia	Middle East
	Offense	Defense	Average	Average	Average
I. Small Arms	1	1.2	1.1	1.3	1
III. Tanks	64	55	60	46	24

²² This discussion draws on an unpublished paper of 1973, "Review of Index Measures of Combat Effectiveness," by D. M. Lester, Office of Secretary of the Army, and R. F. Robinson, of the Air Staff, and on material provided by the U.S. Army Concept Analysis Agency, Bethesda, Maryland.

²³ U.S. Army WEI compare these families (1) small arms; (2) armored personnel carriers; (3) tanks; (4) armored reconnaissance vehicles; (5) anti-tank weapons; (6) cannon/rockets; (7) mortars; and (8) armed helicopters; (9) air defense artillery.

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The WUV is computed for a given unit thus:

$$\text{WEI} \times \text{Category Weight (W)} \times \text{Quantity (Q)} = \text{WUV}$$

Hence:

$$\begin{aligned} \text{WUV} = & \text{WEI}_{\text{small arms}} \times \text{CW}_{\text{small arms}} \times \text{Q}_{\text{small arms}} \\ & + \text{WEI}_{\text{tanks}} \times \text{CW}_{\text{tanks}} \times \text{Q}_{\text{tanks}} \\ & + \text{WEI}_{\text{other(s)}} \times \text{CW}_{\text{other(s)}} \times \text{Q}_{\text{other(s)}} \end{aligned}$$

Sample WUV computed in 1978 showed these differences among divisions:

	Offense	Defense
US Armored Division	50,816	53,651
USSR Tank Division	37,889	38,127
US Mechanized Division	45,025	48,877
USSR Motorized Rifle Division	40,664	40,714

In practice, these are compared to a defending U.S. Armored Division and expressed as a ratio, an Armored Division Equivalent (ADE):

	Offense	Defense
US Armored Division	0.95	1.00
USSR Tank Division	0.71	0.71
US Mechanized Division	0.84	0.91
USSR Motorized Rifle Division	0.76	0.76

Generally, the more one aggregates using this technique, the more the input judgments—however carefully drawn from knowledgeable professionals—dominate results, and therefore the less reliable are the quantifications.

WEI suffer from:

- Linearity (20 bullets are not necessarily 20 times effective as 1 bullet).
- Lack of comparability (if $\text{WEI}_{\text{tank}} = 100$ and $\text{WEI}_{\text{rifle}} = 1$, 100 rifles \neq 1 tank).
- Dependence on judgmental inputs *vice* reliable combat or test data.
- Ignoring synergistic effects of weaponry (tank plus scout-foot is some multiple of WEI_{tank} plus $\text{WEI}_{\text{rifle}}$).
- Category limitations (no radar, C³I).*

WUV suffer from:

- Sensitivity to judgments on category weights.
- Cascading uncertainty, stemming from summed WEI.
- Slighting terrain, weather, morale, doctrine, training, and relative finesse or efficiency. Military history is replete with examples which support Napoleon's view that in war "mind and opinion make up more than half of reality," and which confound Voltaire: "Dieu est toujours pour les gros batallions."

WEI/WUV analysis is better for small-scale military balance comparisons which attempt no more than to describe potential, or resources on both sides, e.g.:

- Weapon system trend comparisons.
- Tactical force balances in local situations.

* Command, Control, Communications, Intelligence.

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WEI/WUV analysis is weak for large-scale net assessments, such as portrayal of the theater force balance, and weakest when it purports to predict a campaign outcome, precisely since it perforce deals with static comparisons, and cannot take into account such dynamics as force concentration, and superior tactics.

To illustrate these points, let me cite two examples from the work of Karber, et. al., of the BDM Corporation. In their *Trends in the Central European Military Balance*, they used a series of charts which plotted the cumulative WEI of the Warsaw Pact weapon systems vis-a-vis those of NATO. For example, this series on tanks, which showed first inventories, then types, and finally WEI trends (Figures 4,5,6).²⁴

I regard this application of WEI as meaningful, better than saying only that the Pact has a 3:1 superiority in numbers of tanks, because the WEI take armor protection into account, and portray the differing firepower of older and newer types in the inventories on both sides. The graphs portray a large and growing gap in capabilities, both in quality and quantity, which might inform policy makers contemplating amelioration via better NATO tank or antitank systems.

Portraying trends is helpful. Carson of OSR, cited *supra*, noted that in 1977 overall the Pact enjoyed a land forces advantage of 1.7:1 over NATO, as measured by WUV (ADE); he did not say what this means (although his is clearly a more helpful statement than simply a ratio of numbers of divisions on either side). Karber, writing about the same time, computed the WUV ratio at 1.85:1, and noted usefully that NATO had improved its WUV only 42% since 1965, as contrasted to a 69% plus-up for the Warsaw Pact.

But Karber, et. al. have also provided an excellent example of the perils of using and interpreting gross WEI/WUV ratios.²⁵ Applying WEI/WUV analysis to the German and Allied opposing forces in 1940 (before the German offensive), they found overall a fairly even balance. An intelligence analyst then might have used WEI/WUV to show that the Allies were offensively postured, with a clear edge in tanks, and some advantage in artillery. The Germans seemed better postured for defense, with superiority in antitank systems, anti-aircraft systems, and aircraft. WEI ratios are shown in figure 7.

Obviously, such analysis, limited to theater gross comparisons, could not have led to a warning of the German cover and deception which led to a concentration of forces in the center. The Germans threw 29 divisions through Holland in a swift, shocking campaign which drew 57 Allied divisions into Flanders. Meanwhile, 19 German divisions pinned 44 Allied divisions behind the Maginot Line, while 45 divisions massed for a crushing assault through the Ardennes against the 15 Allied divisions defending there. In short, the Germans accepted the risk of inferior force ratios on two fronts (albeit assuring themselves of offsetting advantages of surprise and initiative) in order to generate a clear superiority of force for breakthrough in the center (Map, Figure 8).²⁶

While the division-to-division ratio was 3:1 at the Ardennes *schwerpunkt*, the WEI/WUV ratio was 4:1, reflecting, among other measures, German non-divisional firepower massed there (Figure 9).²⁷

²⁴ Karber, et. al., *op. cit.*, pp. 21, 23, and 25. Classified SECRET.

²⁵ Karber, P. A., Whitley, G., Herman, M. and Komer, D., "Assessing the Balance of Forces: France 1940," BDM, McLean, Virginia, June 1979.

²⁶ *Ibid.*, p. 3-3.

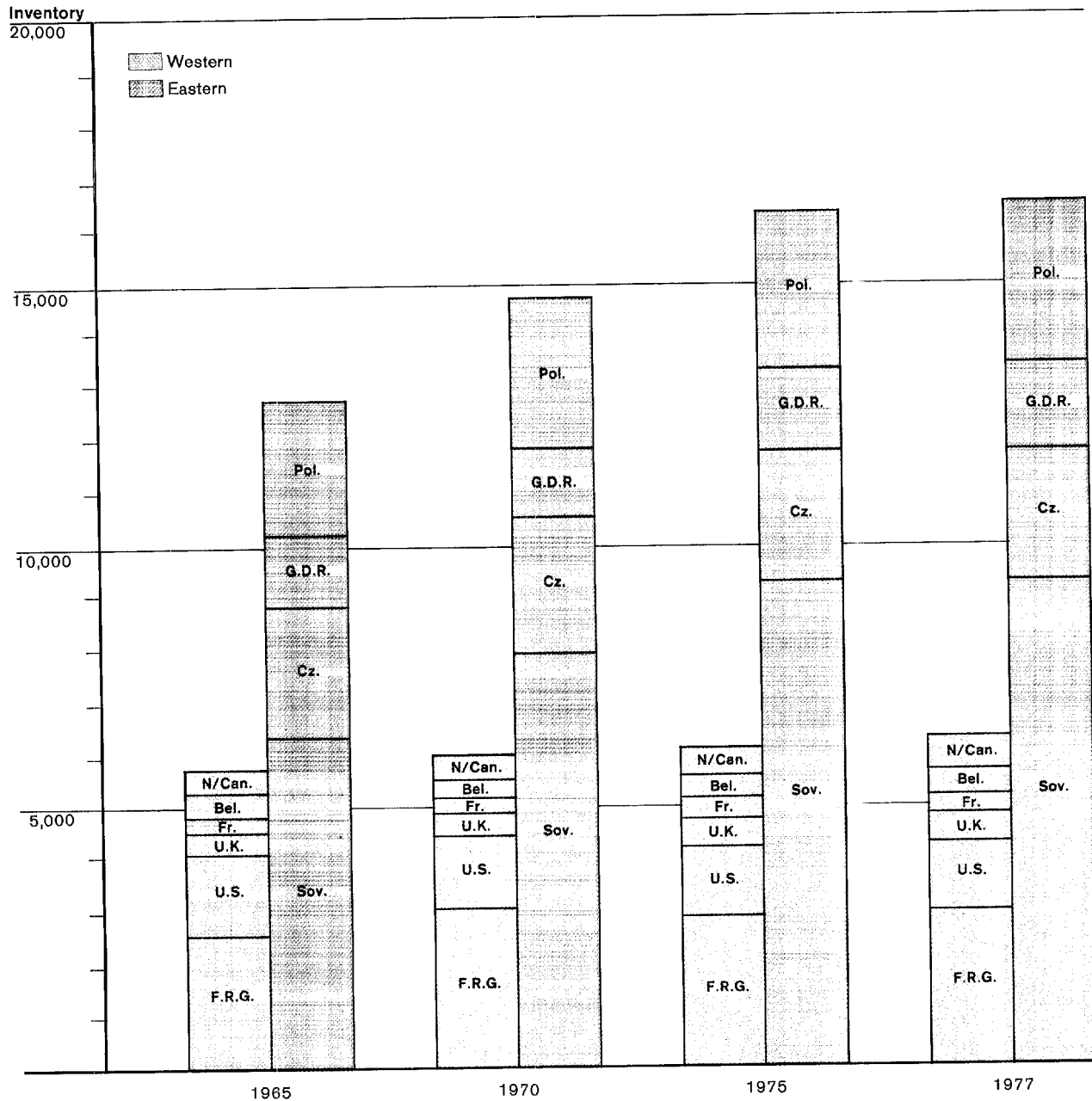
²⁷ *Ibid.*, p. 4-4.

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Center Region Comparisons
Medium and Heavy Tanks

Figure 4



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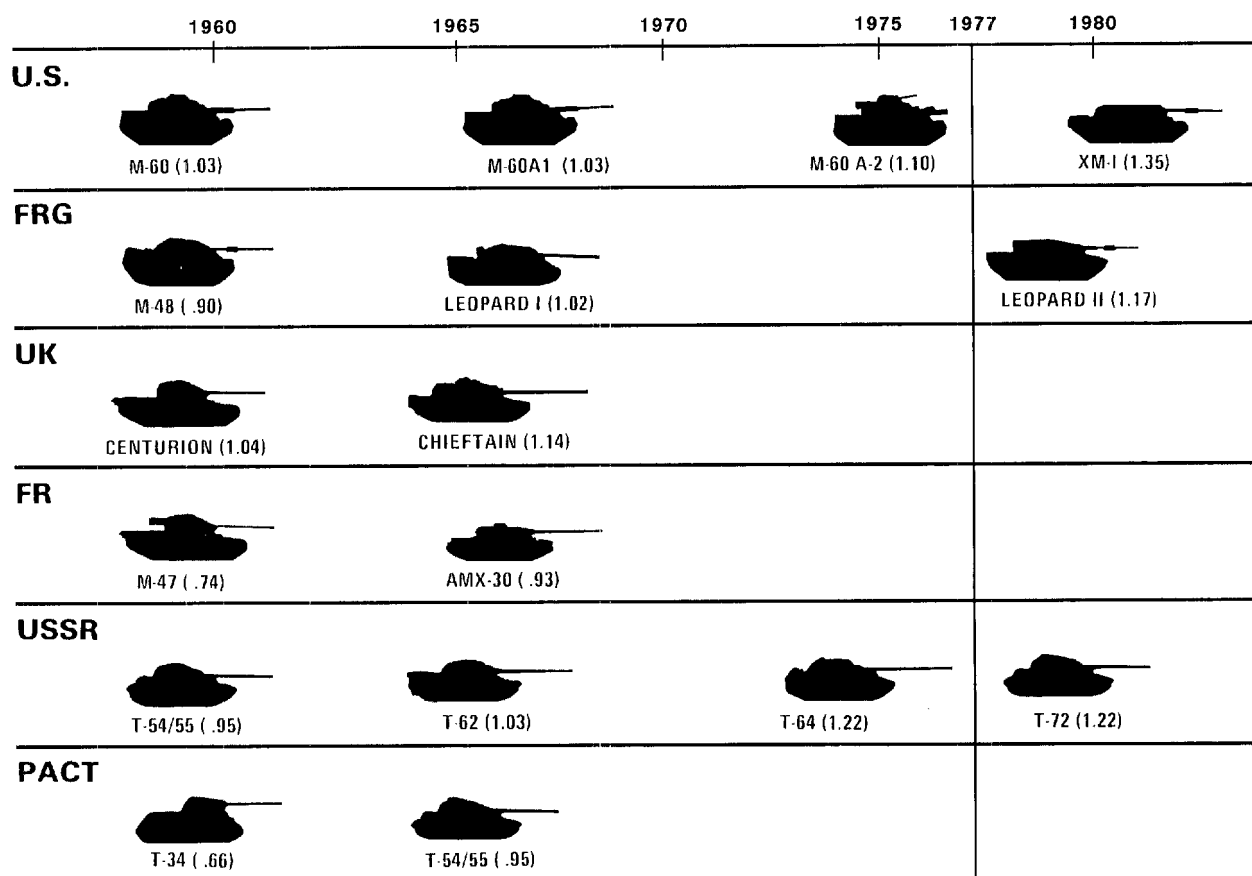
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Deployment of New Generation Technology Tanks

Figure 5

(WEI Standard-M-60AI)



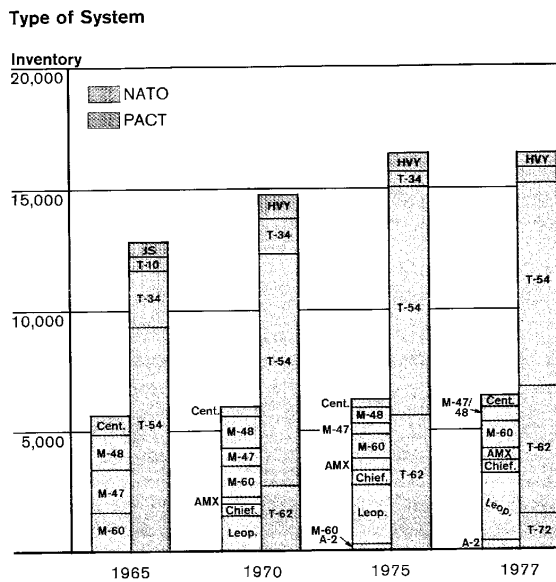
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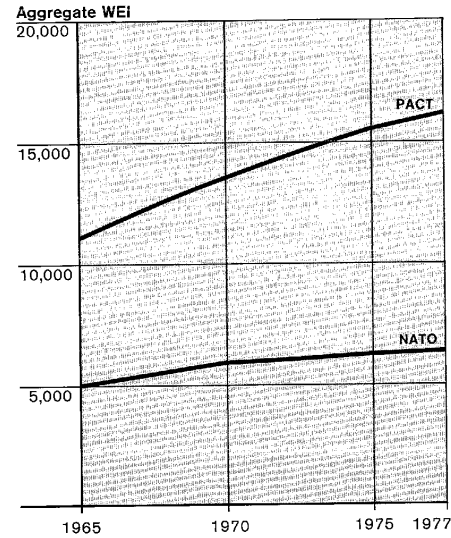
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**Medium and Heavy Tanks
(Active Units)**

Figure 6



WEI Trends



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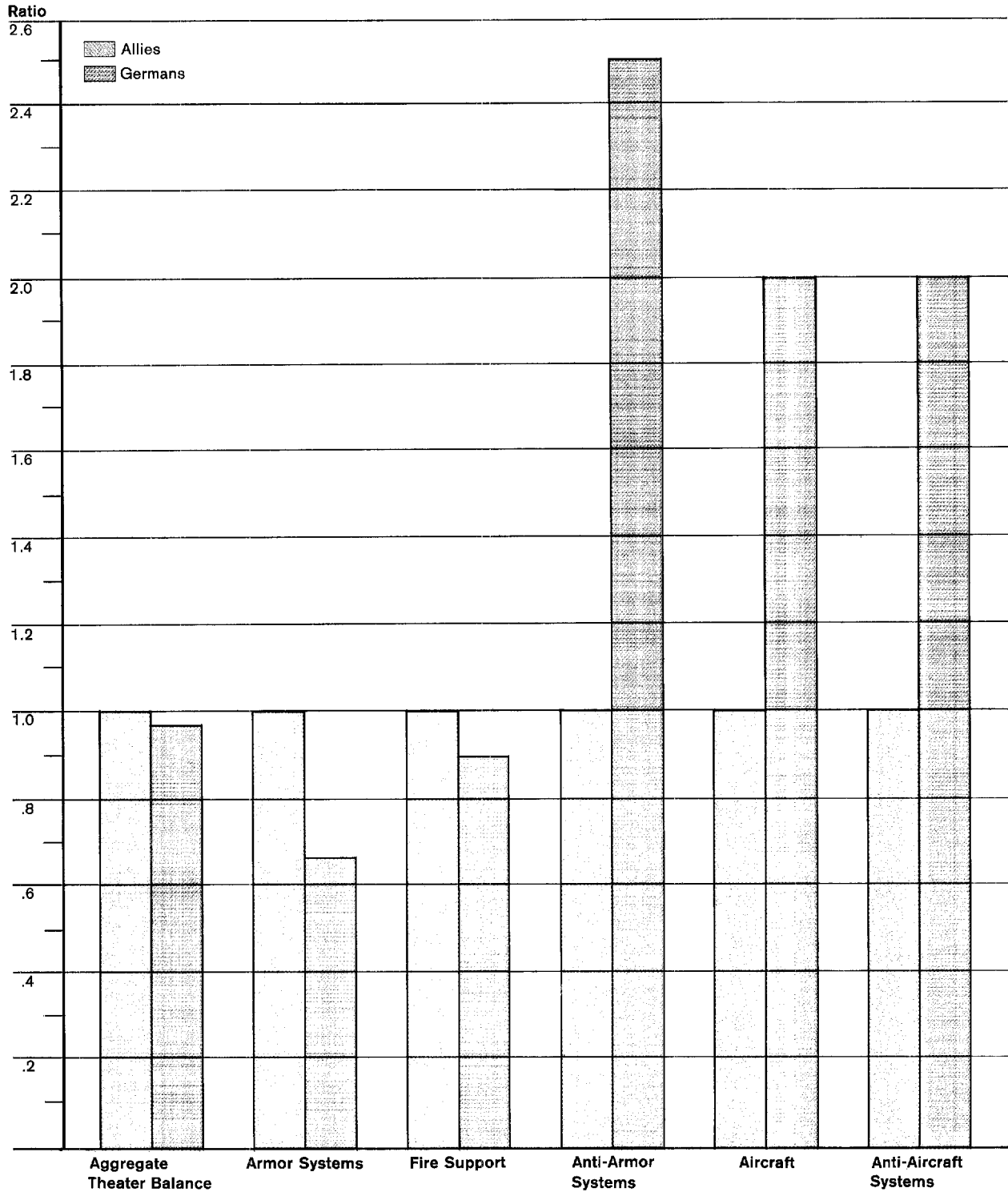
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Force Ratio Comparisons

Figure 7

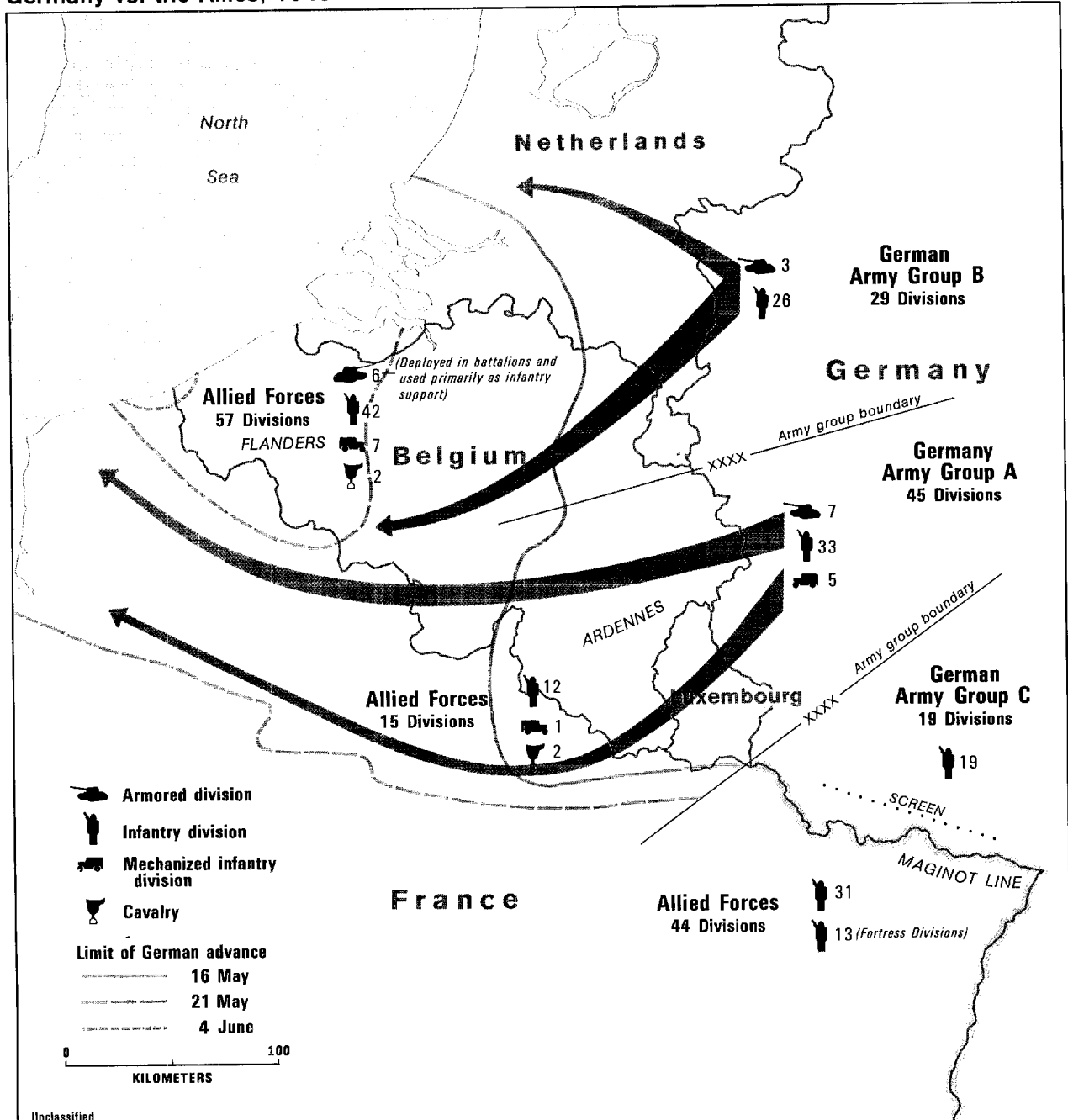


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Germany vs. the Allies, 1940: Balance of Forces in Sectors of Attack

Figure 8



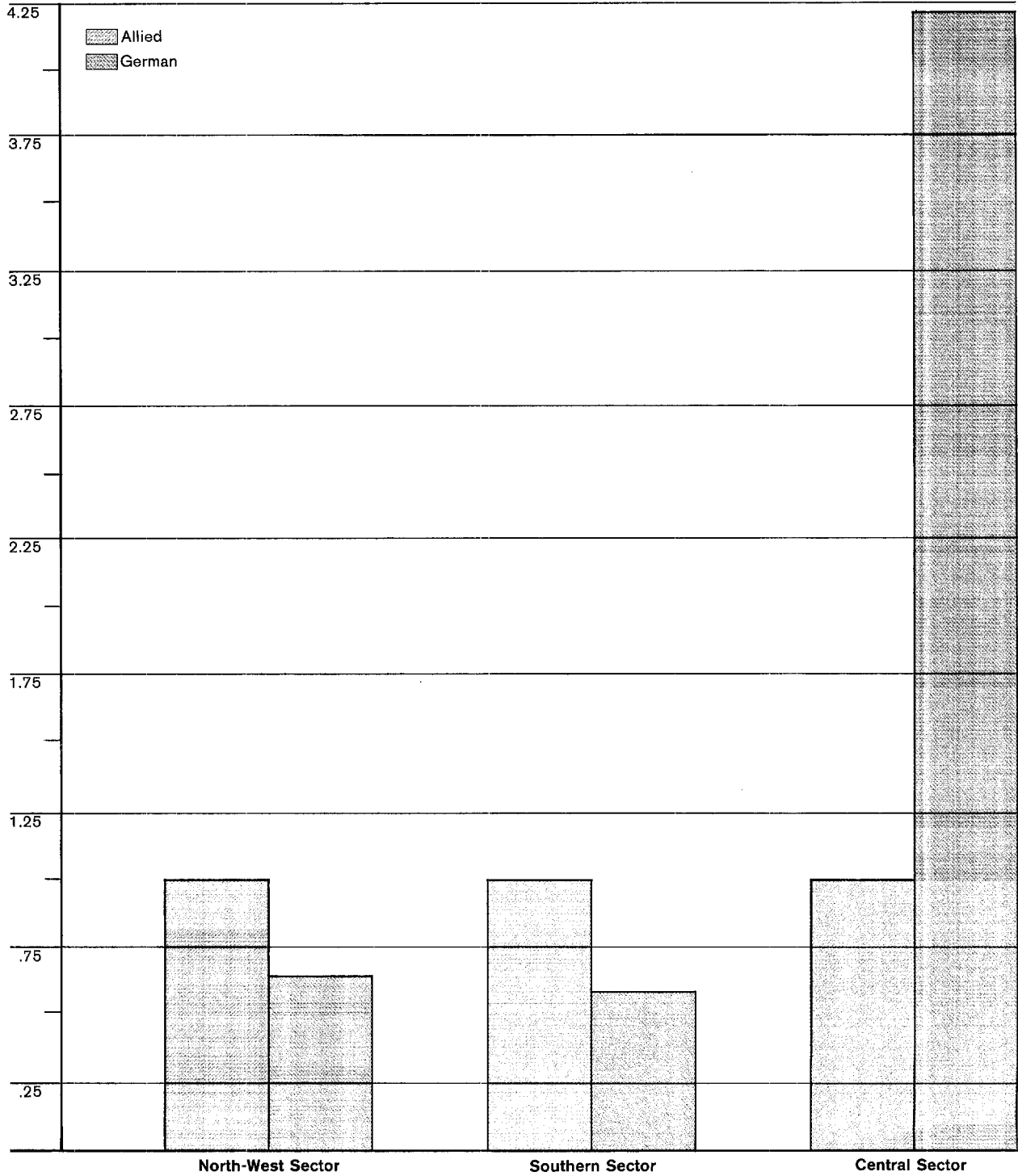
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Comparison Ratio by Sector

Figure 9



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To illustrate a contemporary application of this sort of force balance assessment, here is an example (see Table VIII) from the OASD/PA&E paper cited above. The analysts used WEI/WUV to portray how the Warsaw Pact, taking advantage of its growing ground force capabilities and its advantages of initiative, could, in 1984, create Ardennes-like force ratios opposite the German I Corps and British I Corps in NATO's Northern Army Group. Postulated is a Pact attack on M plus 5, (NATO M plus 10) with five Fronts and 89 divisions (consistent with NIEs 4-1-78 and 11-14-79). The "base case" is a Soviet strategy of superiority everywhere, in which event force ratios of 6:1 at the *schwerpunkt* become possible. The "option" accepts parity everywhere except there, in which case ratios of 8.3:1 at the breakthrough sector become possible.

Table VIII

Pact Force Advantages in Alternative Force Allocation Tactics ²⁸

Pact/NATO Ratios by Corps	NEI	GEI	UKI	BEI	GEIII	USV	USVII	GEI
Base	1.5	6.1	6.1	1.5	1.5	3.0	1.5	1.5
Option	1.0	8.3	8.3	1.0	1.0	1.0	1.0	1.0

These data point up the danger that SACEUR, General Rogers, may have the modern Russian equivalents of Halder, Guderian and Rommel facing him, and they illustrate for intelligence the criticality of our warning and indications estimates. I agree with Karber that WEI/WUV analysis has its place "as a reasonably short hand method for establishing military force relationships which require further analysis to have any real significance . . ." ²⁹ And I reiterate that its best applications are found at Army Group (Front) or lower echelon.

Of course, WEI/WUV numbers are not the only numerical methods available for assessing force balances. Two other techniques of static analysis should be described, both purporting to account for intangibles omitted from WEI/WUV. One might be termed a macro-analysis, in that it deals with the larger aspects of the power relationship, assigning weights to each. Ray S. Cline, former Deputy Director for Intelligence, CIA, and former Director of the Bureau of Intelligence and Research, Department of State, proposes an overall formula as follows: ³⁰

$$P_p = (C + E + M) \times (S + W)$$

where P_p is perceived power

C = critical mass = population + territory

E = economic capabilities

M = military capabilities

S = strategic purpose

W = will to pursue national strategy

Within this paradigm, Cline calculates M, military capabilities, by judgmentally awarding weights for (1) quality of manpower, (2) weapon effectiveness, (3) infrastructure and logistics, and (4) organizational quality, averaging, and multiplying by manpower. He produces a number for every nation, which enables tabular displays of force balances as shown in Table IX.

²⁸ OASD/PA&E, *op. cit.*, Table I-20, p. I-34. N.B.: This paper cautions (p. I-28) that the WEI/WUV-derived tables do not purport to predict outcome, "apply only to *corps-level* engagements and should not be used to evaluate adequacy of NATO's *theater* posture."

²⁹ Karber, "Assessing the Balance of Forces," *op. cit.*, p. 5-1.

³⁰ Cline, Ray S., *World Power Assessment: A Calculus of Strategic Drift*, Boulder, Colorado, 1977.

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Table IX

Non-Nuclear Military Forces: Estimates of Equivalent Combat Capabilities³¹

United States and NATO	Total Manpower (thousands)	Manpower Quality	Weapon Effectiveness	Infrastructure & Logistics	Organizational Quality	Average	Equivalent Units of Combat Capability
United States	2,086	1	1	0.9	0.8	0.9	1,877
West Germany (FRG)	515	1	0.9	0.9	0.7	0.9	464
France	513	0.8	0.7	0.8	0.6	0.7	359
Turkey	490	0.7	0.5	0.4	0.5	0.5	245
Italy	362	0.6	0.5	0.5	0.4	0.5	181
United Kingdom	344	1	0.8	0.8	0.7	0.8	275
Greece	200	0.7	0.5	0.4	0.5	0.5	100
Netherlands	112	0.9	0.8	0.8	0.6	0.8	90
Belgium	88	0.9	0.8	0.8	0.6	0.8	70
Canada	78	0.9	0.6	0.6	0.6	0.7	55
Portugal	60	0.7	0.2	0.2	0.6	0.4	24
Norway	39	0.9	0.8	0.6	0.6	0.7	27
Denmark	35	0.8	0.6	0.6	0.4	0.6	21
Total, gross manpower: 4,922,000		Total, equivalent units of combat capability: 3,788					

Warsaw Pact

USSR	4,400	0.7	0.9	0.7	0.5	0.7	3,080
Poland	300	0.6	0.7	0.6	0.5	0.6	180
East Germany (GDR)	204	0.9	0.8	0.6	0.7	0.8	163
Rumania	191	0.5	0.6	0.6	0.4	0.5	96
Czechoslovakia	190	0.8	0.8	0.6	0.4	0.7	133
Bulgaria	177	0.6	0.7	0.6	0.5	0.6	106
Hungary	120	0.8	0.7	0.6	0.5	0.7	84
Total, gross manpower: 5,582,000		Total, equivalent units of combat capability: 3,842					

Cline modifies these totals further by factors which take into account "strategic reach" (the distance from homeland) and "scale of effort" (Israel and the USSR get a bonus for perceived seriousness about matters military). He is then able to draw up a "final assessment." The following table is an extract to illustrate the outcome:³²

Table X

Final Assessment

Country	Concrete Elements Perceived Power	National Strategy	Will	Total Coefficient	Total
United States	468	0.4	0.5	0.9	421
FRG	112	0.7	0.8	1.5	168
UK	99	0.6	0.4	1.0	99
USSR	402	0.8	0.5	1.3	523
GDR	22	0.8	0.2	1.0	22
Poland	48	0.5	0.2	0.7	34

³¹ Ibid., pp. 114-130³² Ibid., p. 173

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In contrast with Cline's "macro" technique, which weights only the grossest characteristics of national military potential, are such methods of microanalysis exemplified by Trevor N. Dupuy's "Quantified Judgment Model," a method of comparing the relative combat effectiveness of two opposing forces in historical combat by determining the influence of environmental and operational variables upon the force strength of the two opponents.³³ Dupuy assigns numbers to fifty or more variables in a series of complex equations describing a real (or hypothetical) battle, and undertakes comparison following this construct, as shown in Figure 10.

Illustrative is his computation of Force Strength (S), a concept resembling WEI/WUV:

$$S = (W_s + W_{mg} + W_{hw}) \times r_n + W_{gi} \times r_n + (W_g + W_{gy})(r_{wg} \times h_{wg} \times z_{wg} \times w_{wg}) + (W_i \times r_{wi} \times h_{wi}) + (W_y \times r_{wy} \times h_{wy} \times z_{wy} \times w_{yy})$$

The symbols represent the following:

- S —Force Strength (overall weapons inventory value of a combat force, as modified by environmental variables)
- W —Weapons Effectiveness or firepower inventories of a force, a summation of the OLI values of all small arms (W_s), machine guns (W_{mg}), heavy weapons (W_{hw}), antitank weapons (W_{gi}), artillery (W_g), air defense weapons (W_{gy}), armor (W_i), or close air support (W_y)
- r_n —Terrain factor, related to infantry weapons
- r_{wg} —Terrain factor, related to artillery
- h_{wg} —Weather factor, related to artillery
- z_{wg} —Season factor, related to artillery
- w_{yg} —Air superiority factor, related to artillery
- r_{wi} —Terrain factor, related to armor
- h_{wi} —Weather factor, related to armor
- r_{wy} —Terrain factor, related to air support
- h_{wy} —Weather factor, related to air support
- z_{wy} —Season factor, related to air support
- w_{yy} —Air superiority factor, related to air support

But he goes on to compute Combat Power Potential—which sweeps in much more than the U.S. Army's Weighted Unit Value:

$$P = S \times m \times l_e \times t \times o \times b \times u_s \times r_u \times h_u \times z_u \times v$$

The symbols represent the following:

- P —Combat Potential (Force Strength as modified by operational variables)
- m —Mobility factor (as calculated in Equations (6) and (7); m for a defender is always unity)
- l_e —Leadership factor (when data permits an assessment)*
- t —Training and/or Experience factor (when data permits an assessment)*
- o —Morale factor (when data permits an assessment)*
- b —Logistics factor (when data permits calculation or assessment)*
- u_s —Posture factor, related to Force Strength
- r_u —Terrain factor, related to Posture
- h_u —Weather factor, related to Posture
- z_u —Season factor, related to Posture
- v —Vulnerability value

³³ Dupuy, T. N., *Numbers, Predictions, and War*, MacDonald's and Jane's, London, 1979, pp. 50ff.

* This is incorporated in a relative combat effectiveness value (CEV) or factor, when it has been calculated.

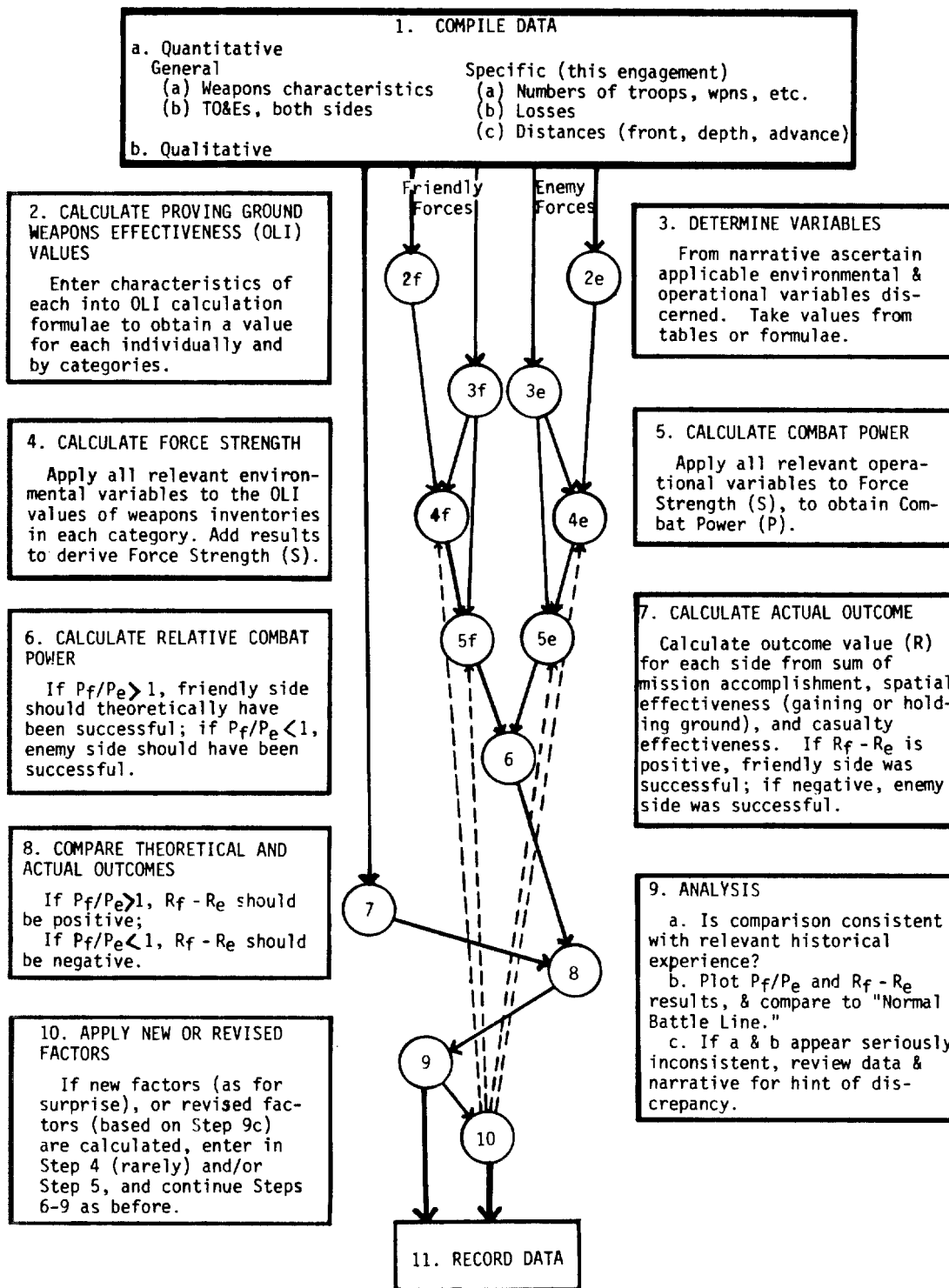
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Quantified Judgment Model
(After T.N. Dupuy)

Figure 10



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With Combat Potential (P) in hand the QJM analysts can proceed to ascertain the theoretical outcome of an engagement between two forces, by means of comparing the ratio of the opposing combat power potentials.

The QJM promises to analyze much more than WEI/WUV comparisons: it purports to predict outcome of battle. For example, QJM could assess the force balance in Central Europe by arraying expected forces on both sides along the German interzonal border, and running sector-by-sector through the model enough times to generate a prediction of outcome: which side would advance or retreat and what the losses would be on each side.

All the analytical techniques described above may generally be classified as "static" in that they do not purport to account for maneuver or other interactions between opposing forces. To examine a force balance thoroughly, concentration of force, tactical finesse, reinforcement, feint, delay and other battle dynamics should figure in the calculus. The QJM borders on being "dynamic," that is, if pursued through enough iterations, on a large enough scale, the dynamics of a whole war could be analyzed, the results of each battle (or time period of operations) establishing a new force balance as start points for succeeding "engagements." But it would be laborious, and in the end, unconvincing.

More or less elaborate, truly dynamic models, war simulations, or games, computerized to speed the enormous numbers of calculations involved, exist in profusion throughout the government—one recent GAO survey identified over 400, of which the U.S. Army (understandably) owned the most models capable of resolving, or predicting, the outcome of battles, campaigns and wars. Most such models can be traced back to the seminal ideas of the English mathematician, Frederick W. Lanchester, who in *Aircraft in Warfare* (1916) proposed that the rate of loss or attrition in any battle is a function of the size of the opposing force multiplied by a coefficient (constant) measuring relative combat effectiveness. From this seemingly simple statement one can develop equations representing strength on either side at any time during a battle, and the probability for either side's winning. Lanchester's mathematics dictate that, ultimately, victory is a function of the *square* of force strength. In short, any force balance can be measured by comparing the coefficient of effectiveness and the square of the size of the forces on each side—all other things being equal.

But as one recent book on the subject of mathematical assessment of warfare notes:

Unfortunately, all other things are rarely equal in warfare.

In applying mathematics to human affairs, including warfare, the ability to solve models must not be confused with the ability to formulate the correct or appropriate model. Lanchester's equations were an intellectual breakthrough in the analysis of warfare insofar as they provided a deep insight into the possibilities inherent in simple models of combat. This is not the same as providing operational information or explicit guidance in setting policy for complicated situations in actual warfare.³⁴

One study of Lanchestrian models compared with historical experience concluded that the mathematical equations were not valid in large-scale situations and lacked predictive power.³⁵

³⁴ Brewer, G. D. and Shubik, M., *The War Game*, Cambridge, M.A., 1979, page 78.

³⁵ Willard, D. W., *Lanchester as a Force in History: An Analysis of Land Battles of the Years 1618-1905*, Research Analysis Corporation, RAC-TP, Washington, D. C., 1962.

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Few of us who have worked with mathematical models of that complex process, land combat, have confidence that we can thereby examine any aspect of battle, for any purpose, without hedging the results of our analysis with careful and extensive reservations. As one expert put it:

All mathematical models must simplify: that is their strength. They may, in oversimplifying, distort: that is their danger.³⁶

For the past two decades most studies within the Department of Defense have relied heavily on mathematical and statistical techniques which have the advantage of presenting for busy policy makers much information in a highly compact form. But any policy maker who is thus served is vulnerable in at least two respects: (1) the input data are usually not evident, sources are often questionable, and their relevance undetermined; (2) the models, which purport to describe behavior, are seldom validated, and are frequently simply unreliable. A recent magazine article noted that: "Many analyses conceal spurious content behind protective layers of mathematics and statistics."³⁷ The same article quotes the then Secretary of the Navy, Graham Claytor, in a recent speech at the Naval War College:

One of the most frustrating things I have encountered in this job has been the tendency on the part of some staff people to use systems analysis as a cover for what is really subjective judgment.

But perhaps the most incisive inquiry into the extent to which mathematical techniques can assist understanding of force balance was provided in a report prepared for the U.S. Air Force project RAND by J. A. Stockfish. In the conclusion of *Models, Data, and War: A Critique of the Study of Conventional Forces*, Stockfish stated:

No satisfactory simple metric exists for aggregating the diverse fighting elements that comprise modern conventional forces. The question may be raised, therefore, whether and in what way it is meaningful to try to model confrontations of such forces. Almost any attempt to develop an aggregate metric of the diverse elements must involve assigning a set of value weights to the diverse specialities. The firepower index, as an example of such an endeavor, drew upon an admixture of physical measurements and implicit assessments regarding the tactical worth of different combat specialities . . . A case can be made that many of these assessments corresponded to the valuations imbedded in ongoing weapon procurement decisions that provided, through time, more costly weapons and force-structure elements. But, apart from superficially rationalizing the idea that more costly and technically superior systems might provide combat capability commensurate with cost, has any useful knowledge followed from the intellectual effort of deriving firepower indices? Further, has any useful knowledge followed from aggregative campaign models that have used these indices as input data? My answer to both of these questions is "NO." A less harsh answer is that these efforts may have generated some insights insofar as they were an aspect of broader question-raising regarding the role and structure of general purpose forces. But any positive product obtained may have been more than offset by the point that both the firepower scores and the findings of models that used them were highly susceptible to abuse. Their aggregative quality

³⁶ Hammerton, M., "A Case of an Inappropriate Model," *Nature*, July 1964, pages 63-64.

³⁷ Brewer, G. D., and Blair, B. G., "Wargames and National Security With a Grain of SALT," *The Bulletin of Atomic Scientists*, Vol. 35 No. 6, June 1979, page 18.

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concealed much subjective thinking. They distracted attention and effort* to understand combat operations.”³⁸

By now the informed reader is no doubt chafing at the lack of consideration for the Soviet perspective. Unfortunately, we do not have any considerable insights into the methods used by the Soviet leadership to assess the overall force balance in Central Europe. We can certainly infer that their notions of “how much is enough” are significantly different from those prevalent in the American leadership. As in intercontinental weaponry, their approach to sizing and equipping general purpose forces appears, by our criteria, to be governed by safe-siding towards overkill, extensive redundancy, and a determined drive for qualitative *and* quantitative superiority over potential adversaries, the armed forces of NATO.

We do have some information on how they view balance of forces at the Front (Army group) echelon or below.³⁹ Interestingly, the notion of “balance of forces” figures prominently in their thinking and they appear to rely on mathematical techniques of analysis. Throughout the extensive, relevant literature available to us, the notion of “correlation of forces” is to be found. In its general sense, this term connotes comparison of the totality of the means available for waging war—economic and natural resources, societal will and cohesion, logistic and technological capability, as well as armed forces. But there is a comprehensive body of writings, much of it classified by the Soviets, in which the term “correlation of forces” is used in a more particular sense to apply to an assessment of force balance in a local, specific, tactical sense. These latter writings appear to be aimed at providing a field commander a way of ascertaining whether a given operations plan adequately provides that force superiority which would insure success in battle. There are three basic numerical concepts or factors which seem to figure in most of this Soviet combat calculus.

- The first is “equivalency factor,” or “coefficient of commensurability,” a number reflecting a ratio comparing a stated weapon to a standard. One particular weapon of a type is designated as the standard, and the coefficient for any other weapon computes the number of those weapons required to offset the combat effectiveness of the first in a given battle. In other words, the analyst models a battle involving standard weapon A on both sides. He then replaces weapon A with that number of weapons B on one side which will leave unchanged the outcome of the battle (or model). The ratio of number of B required to offset A is then the “equivalency factor” or “coefficient of commensurability.”
- A second concept is that of “combat capabilities.” This is a number used for force comparisons derived from a Lanchester-like computation: $CC = R \times N \times P$ (where R=rate of fire, N=number of elements, and P=probability of success for one shot). Proponents of this measure admit its inadequacies, but justify its use on the grounds of rapidity and simplicity of computation. (It is germane to note that a similar formula is used for tactical force comparisons in the U.S. Army, with the same caveats).

* Words missing in original text—Editor.

³⁸ Stockfish, J. A., *Models, Data, and War: A Critique of the Study of Conventional Forces*, Rand, R-1526-PR, Santa Monica, California, 1975., page 128.

³⁹ In this discussion I am indebted to [redacted] his colleagues who have read and analyzed the Soviet sources. Cf., Rehm, A., “Soviet Operations Research Books and Related Books by Military Authors—A Bibliography,” April 1979; also, DIA “USSR: Methodology for Net Assessment of Military Capabilities—Introductory Survey,” DDI=2610-7-76, November 1976.

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- A third type number, "combat potential," appears to be equivalent to the U.S. WEI/WUV. "Combat potential" for particular weapons can be aggregated into a weighted unit value. Weighting also considers the mission of the unit, its firepower, and mobility. The process involves designating a standard item of armament or a standard military unit, and "combat potential" is expressed relative to that standard. Once again, computations are based upon the notion that each "combat potential" represents how many of the units or weapons being measured are required to offset the standard weapon or unit in a battle between balanced forces, so that the outcome is the same.

There is a recent Soviet military text entitled *Fundamentals of Troop Control in Combat*⁴⁰ which is designed for use by battalion commanders and their staffs. They are urged to use as measures of effectiveness expected enemy losses, own losses, consumption of materiel, and time of mission execution. Among the analytical methods recommended to the commander for his planning are linear and dynamic programming, probability theory, differential equations, systems analysis, operations research, game theory and PERT charting. The text recommends that the commander calculate the "combat capability," the quantitative and qualitative relationships among the forces and materiel in terms of density per kilometer of front, asserting that: "as practice shows, the greatest accuracy can be achieved . . . by coefficients of commensurability of the combat possibilities (firepower, strike force, maneuverability and so on) of various types . . . and the combat potentials of the subunits as a whole."

We would be led to believe by other available literature on the military planning process in the Soviet Union that similar forms of quantification are used to assess the "correlation of forces" by higher commanders and staffs up to the national level, and that they figure in assessments of the theater force balance, or weapon systems procurement decisions. However, we have no examples of such usage, or any other certain information of how quantification figures in high-level decisions, if at all. Nonetheless, it is very much the business of intelligence to look further, and should we be so fortunate as to come upon balance assessment formulae in use in the General Staff, or in the Kremlin, we would be in a much better position to assess the European force balance from the Soviet perspective for the benefit of our own policy makers.

ISSUE III: How to Present the Assessment

Most policy makers face a hundred conceptual and semantic hurdles daily. While we in the intelligence business should regret our having to set up additional impediments, the fact is that only by mastering an understanding of techniques of force balance assessment can policy makers understand intelligence judgments. Onerous though it may be, they are going to have to delve into WEI/WUV or comparable concepts, if they are to do their job. On reflection, this appears to be no more unreasonable than requiring them to comprehend notions like "gross national product," "consumer price indices," or "balance of payments." Anthony Cordesman laid out the problem well. To compress and present effectively the complicated data inherent in analyzing force balances, we must use some quantitative shorthand, some metric of force effectiveness which reduces disparate elements on both sides to a common denominator. Policy makers should understand that it is not now possible to model on a computer the clash of all forces in the European theater, since "even the most complex computerized wargame is still an endless series of compromises with reality. Without exception models of large scale combat or combined arms must

⁴⁰ Ivanov, Savel'yev and Shemanskiy, *Fundamentals of Troop Control in Combat*, Voenisdat, September, 1977.

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grossly abstract or ignore critical factors shaping the balance of the forces compared. . . . No war game to date can begin to adequately simulate large-scale armored maneuvers even if air forces are not played.”

“Most of the advanced war games used in the Pentagon cannot realistically simulate a large-scale armored breakthrough, simultaneous land and air warfare, or the major differences in tactics and force structure between individual and Warsaw Pact forces.”⁴¹

And so for the foreseeable future we will have to use a more “static” technique for comparing forces. It is incumbent upon intelligence analysts to explain to the policy maker, and upon the latter to understand that even “static” force comparisons have major limitations:

1. They cannot accurately reflect differences in training, readiness, morale, and many other critical aspects of military capability.
2. They do not reflect many of the qualitative differences between the equipment compared. This can disguise major differences in performance capability which are significantly more important than equipment numbers.
3. They are not fully explicit. Almost all aspects of force strength can be counted using very different categories and definitions. A count that includes all artillery, for example, disguises critical differences in range, mobility, and crew protection.
4. If the count of weapons or unit strength is not modified by some measure of effectiveness (MOE), it does not indicate the capability of what is compared in war. If the count is modified by such a measure such as firepower score or kill probability, it then becomes judgmental and ceases to be explicit.
5. Most static force comparisons are made of similar types of equipment. Yet, antitank weapons do not fight antitank weapons, bombers do not fight bombers, and ballistic missile submarines do not fight ballistic missile submarines.
6. Comparisons of total national force strengths are often unrealistic in the sense they involve forces which can never engage each other in wars. Wars will inevitably be fought by only a portion of available forces.
7. War is a dynamic and complex process. Units are constantly lost in combat, they maneuver, they reinforce, or they alter in force strength and weapons mix. Even the most sophisticated static force comparison is a “snapshot.” It artificially freezes the balance in a given moment, when the real balance shifts over time. No matter how well the analyst chooses his comparison, it is the dynamic process of war which may actually determine comparative military capability.
8. No comparison can count everything. Almost inevitably, the broader the comparison, the more that must be omitted.⁴²

While the foregoing is certainly useful for charting shoals and reefs in analytical waters, it scarcely serves for laying a course for the National Foreign Assessment

⁴¹ Cordesman, *op. cit.*, p. xviii-xix.

⁴² *Ibid.*

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Center towards an estimate of the force balance in Central Europe. I would like to propose seven markers, or guidelines, useful for that purpose:

- Measure output rather than input
- Treat trends vice status quo
- Go graphic
- Compare opposites
- Be selective
- Think Soviet
- Deal with perceptions

Measure output rather than input. The first consideration to bring to an assessment of any force balance is concern for answering that ultimate question "What does it mean?" We should be searching for ways to show the *implications* of the forces on either side. As we have seen, WEI/WUV, for all their drawbacks, have the advantage of serving as a qualitative common denominator, and allow some degree of commensuration. But there are less judgmental, less arcane measures of effectiveness than WEI/WUV if our imagination will search them out. To illustrate, NIE 11-14-79 noted that the Warsaw Pact had assigned about 18,200 artillery pieces of 122mm or larger to its ground forces opposite NATO, and that the Soviets are continuing to replace towed howitzers with self-propelled howitzers. Included in the NIE is a bar chart showing growth in the number of artillery pieces from 1969 to 1979. These are "input" data, crucial for analysis, but scarcely numbers easy to weigh in the balance, or to inform the policy maker what he needs to know about relative artillery capability. Recently OSR developed a chart (see figure 11), using the same Warsaw Pact basic data, which focuses on output—firepower useful for attack preparation or defensive barrage—and shows trends from 1979 to 1984. Looking thus at the capability of either side to lay down tons of projectiles in a concentrated three minutes of preparatory or defensive fires, the meaning of NATO's growing quantitative and/or qualitative inferiority becomes evident.

Treat trends. The generation of modern general purpose forces is a lengthy and expensive process. Forces which are in the field today eventuated from decisions taken by governments five to ten years ago. Most weapons are evolutionary, predictable improvements on predecessors. National establishments for research, development, and testing which produced today's weapons can reasonably be assumed—in the absence of information to the contrary—to be working on tomorrow's weapons systems. What weapons and units are afield in the forces on either side of a force balance at any given point in time, then, is information less interesting than the pace, kind, and amounts of changes which have been occurring in the recent past, from which may be inferred what is likely to happen, quantitatively and qualitatively, to those forces in the future, and when. The OSR chart above has the virtue of showing not only the state of affairs in 1979, but the relationship likely to obtain in 1984, given what we know about development of artillery on both sides.

Since WEI/WUV are, in effect, output measures, trends measured thereby are similarly useful. Certain developmental trends deserve portrayal, such as the gun-armor race now in dead heat (referring to new techniques for protecting tanks, and new capabilities to penetrate armor).

Go graphic. While prose is indispensable for presentation of analysis, we should neglect no opportunity to visualize principal aspects of a force balance for the busy policy maker. Not only will he understand our estimate better, but he is likely to remember it longer, and use it more effectively.

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Compare opposites. The DCI, in a *Foreign Affairs* article entitled "The Naval Balance: Not Just a Numbers Game" wrote that "a first step is to recognize that only the forces which oppose each other directly can be compared directly."⁴³ Force balance assessments which aggregate, for example, anti-aircraft weapons on both sides violate this principle. In most recent OSR portrayals of force balances, attack helicopters, because they are in Soviet usage an air force element, have been displayed as an element of the air balance, and analyzed accordingly. Actually, an attack helicopter is designed for killing tanks, or participating in ground combat: it is a specialized ground-support aircraft. As a matter of fact, given the centrality of the tank to Warsaw Pact doctrine and force structure, we probably should compare all tank-killing systems on NATO's side against the tanks on the Warsaw Pact side, and vice versa. This sort of tank vs. anti-tank analysis will become the more important as either or both sides deploy advanced tank-killing systems, such as the U.S. A-10 aircraft, the all-weather attack helicopter, the HELLFIRE ATGM, the COPPER-HEAD cannon-launched guided missile, and other tank-disabling/killing artillery munitions.

Be selective. It is impossible, as Mr. Cordesman observed above, to measure everything. In fact, to the degree one confuses the policy maker with a profusion of data, to that degree one renders his estimate useless. The tank/anti-tank balance, artillery firepower available to both sides, ground attack air versus air defense capabilities on both sides—these are all examples of sub-balances which probably belong in a national intelligence assessment. In my opinion, however, comparisons of small arms, machine guns and even mortars are less critical, and may legitimately be excluded. These choices, however, should not be taken lightly. Were one assessing a force balance in the Middle East, one might assign a greater importance to small arms and anti-aircraft guns, given the usefulness of these weapons for fighting in cities like Beirut, than one would accord similar weapons in an assessment of the force balance in Bavaria, where city fighting may be somewhat less important to outcomes.

Think Soviet. To the degree that our information permits, we should determine criticality, and otherwise tailor our estimates, *using Soviet criteria*. Our job should be to present to the policy maker the Soviet perspective on the force balance, using Soviet measures of effectiveness, to the extent these are available to us or can be reasonably deduced. We must be alert to point out to the policy maker in our estimate anomalies in data to which he must bring a Soviet viewpoint for understanding. For example, the absence of an air superiority fighter like the F-15 in the current Warsaw Pact air armada should not be regarded as tilting the air balance in favor of NATO unless it can be shown that the Soviet objective of gaining air superiority by attacking NATO airfields is unobtainable. Similarly, an apparent shortage of Soviet means to attack NATO's sea lines of communication across the North Atlantic should be weighed together with their potential for attacking harbors with land-based missiles, laying mines on harbor approaches, and otherwise operating on SLOC termini.

Deal with Perceptions. In the last analysis, a balance of forces is less a matter of men and materiel than mind (*touché*, Napoleon). Certainly, any count of the forces arrayed against Israel for the past 20 years would have suggested imbalance, and I believe it is factual that most computerized war games or mathematical models would have predicted Israeli defeat in the event of war. Fortunately for the stability of the Middle East, the Israelis have had a great deal of confidence in their own superior morale and efficiency: their perception was of balanced forces, or even of a balance tilted in their favor. To be sure, the early events of the October 1973 War jarred that

⁴³ Turner, S., "The Naval Balance: Not Just a Numbers Game," *Foreign Affairs*, Vol. 55, No. 2, January 1977, page 344.

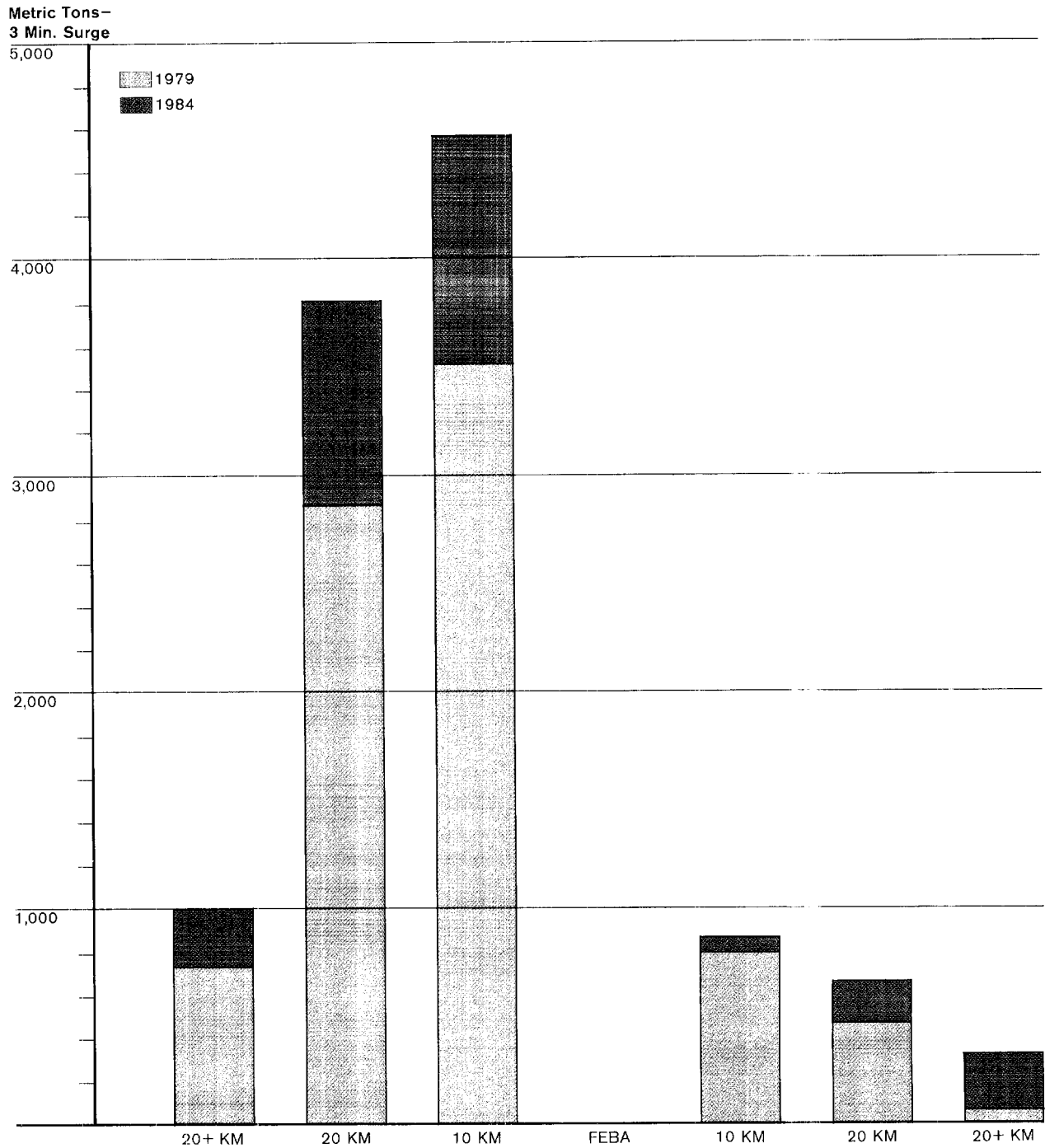
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Comparative Artillery Surge Throw Weights, Central Europe 1979 and 1984

Figure 11



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confidence, but their perception of restored superiority remains a critical factor in any intelligence assessment of that region. Michael Howard in his recent article on "*The Forgotten Dimensions of Strategy*" underscores the importance of perception in strategic appreciations. These perceptions figure in what he calls the "societal dimension: of war:

If we do take account of the social dimension of strategy in the nuclear age, we are likely to conclude that Western leaders might find it much more difficult to initiate nuclear war than would their Soviet counterparts—and, more important, would be perceived by their adversaries as finding it more difficult. If this is the case, and if on their side the conventional strength of the Soviet armed forces makes it unnecessary for their leaders to take such initiative, the operational effectiveness of the armed forces of the West once more becomes a matter of major strategic importance, both in deterrence and defense.⁴⁴

Howard argues that, for a full appreciation of modern strategy, an intelligence assessment must consider not only strategies which rest on such *technological* means as ICBM and intercontinental bombers, but on capabilities to support the *logistical* sinews of war, and abilities to use adroitly armed forces for *operational* purposes. Hence, to assess properly a force balance in Central Europe, the analyst must weigh assets and liabilities in all four dimensions. I would argue that U.S. policy makers deserve nothing less of the intelligence community.

It is probably fitting to close with a prediction: in the decade ahead, intelligence estimates of the balance of "conventional forces" in Central Europe will become much more important for U.S. policy makers. For it seems ever more evident that the risks of war there are heightening, and that such a dread event, in Howard's words:

. . . would be likely to arise out of political crisis—over the rights and wrongs of which Western public opinion would be deeply and perhaps justifiably divided. Soviet military objectives would probably extend no farther than the Rhine, if indeed that far. Under such conditions, the political will of the West to initiate nuclear war might have to be discounted entirely, and the defense of West Germany would depend not on our nuclear arsenals but on the operational capabilities of our armed forces, fighting as best they could and for as long as they could without recourse to nuclear weapons of any kind . . . the prospect of nuclear war is so appalling that we no less than our adversaries are likely, if war comes, to rely on "conventional" operational skills and the logistical capacity to support them for as long as possible, no less than we have in the past.

(All of the foregoing article is classified SECRET No Foreign Dissem.)

⁴⁴ *Op. cit.*

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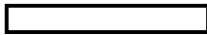
Reflections of a retired analyst

A PLEA FOR CONTINUITY IN INTELLIGENCE PRODUCTION



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Constant reorganization of office and function, whatever benefits may be thought to accrue to the higher structure, can be harrowing for the individual. Thus, when for the third time my office and/or division at headquarters was abolished I was, not coincidentally, far away in  I had sought refuge in a rotational assignment overseas when it became apparent to me in 1976 that the demise of my latest Langley base, the Office of Political Research, was imminent. In 1977 OPR was terminated, or rather merged with the much larger Office of Current Intelligence.

I do not write this article to establish my estimative ability or to prove that I have learned from experience. I have also learned something about carrying out political research under conditions of changing direction, form and nomenclature, and I believe this experience warrants recording.

For over 20 years I have survived in the climate provided by the Directorate of Intelligence (now the National Foreign Assessments Center) for the type of political research and analysis which falls neither in the current nor the estimative category. Called "basic intelligence" in early years, it is aimed at presenting the foundation for the understanding of foreign situations; and of the three categories of finished intelligence sanctified by Sherman Kent,* this is the one that has had the most difficulty in finding a home and establishing an identity in the Agency. In format it has ranged from encyclopedia-like reference works to ad hoc documents, and responsibility for its production has shifted from entire offices to individual analysts engaged primarily in other assignments. Yet I know of no over-all review of these changes. I have at least experienced them and, while my observations are personal, I hope that they will perhaps encourage an informal, in-house critique of the past that will lead to a better future.

On two occasions, 15 years apart, the motivation for abolishing my office/division was the same: consolidation of resources by merging longer-term political analysis with the production of current intelligence. Certainly this integrative approach appeals to administrators and budget overseers. Practically it creates an office which is by nature schizophrenic. In newspaper terms, it is asking the city room to report the news from morning to midday and to turn out scholarly articles in the afternoon.

The first of these mergers with OCI took place in 1963. It terminated the Research Division of OBI, the Office of Basic Intelligence. That division had been established in 1961 to produce the political sections of the National Intelligence Survey (NIS), a mission previously assigned to the State Department's Bureau of Intelligence and Research. The reallocation of this responsibility meant that the Agency was for the first time charged with scheduled, long-term political research and analysis, i.e., the so-called "basic intelligence."

*Sherman Kent, *Strategic Intelligence for American World Policy*, Archon Books, Hamden, Connecticut, 1965, pp. 11ff. Without a well-founded program of basic intelligence, Kent believed, "speculation into the future is likely to be meaningless."

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When the NIS was established in 1948 as the vehicle for such intelligence, producing encyclopedia-like studies on aspects of foreign countries likely to be of concern to U.S. policy makers, each government department, including the old-line ones not regularly involved in intelligence activities, contributed studies within its field of competency. The Department of Agriculture, for example, produced the sections on agriculture. CIA, in keeping with its charter, provided services of common concern. This was the function of OBI, which reviewed and coordinated all sections and also wrote the introductory portions of several NIS publications. CIA production responsibilities were limited to sections on intelligence and security and some economic and scientific studies.

At the time that INR relinquished its production responsibilities, limiting its NIS role to review and coordination, the concept of basic intelligence in the political field had become subject to varying interpretations. For some, "basic" came to signify non-current or non-changing, descriptions which have little meaning in a political context. Roger Hilsman, who headed INR in the early 1960s and seems to have subscribed to these views, referred to "static" intelligence, in contradistinction to the operational. Faced with budget cuts, he preferred to concentrate his resources on the latter, and in this he presaged the fate which was to overtake the NIS.

In the Agency, meanwhile, wider concepts of basic intelligence still prevailed. It was considered to be analyzed and coordinated intelligence basic to the understanding of foreign countries, including their political dynamics, and the NIS was esteemed as the purveyor of such intelligence. The increased production responsibilities that the transfer from INR entailed were welcomed.

The Research Division began with high hopes and hard work. Bruce C. Clarke was its organizer and its first and only chief. The challenge was great. The NIS schedule, already approved by the then prestigious U.S. Intelligence Board, called for the production by 1962 of some 60 sections on topics ranging from social characteristics to subversion. In March 1961 the Research Division had no analysts and no files.

Fortunately, several of INR's experienced researchers elected to remain with the NIS program. They assisted in recruiting some 30 analysts and in assembling files. This latter task was accomplished largely by raiding the libraries of the Survey's contributing departments, for the Agency's holdings of relevant documents were at that time sparse. I myself, with the Middle East as my area of concentration, worked for one of INR's former supervisors, Dr. R. F. S. Starr, whose research had been noted in the preface of Philip Hitti's classic *History of the Arabs*, and who turned out to be one of the few true Middle East experts I would ever meet, much less work for, in the Agency.

Fortunately, too, the mission of the division was clear. We knew what the scheduled sections were to encompass. NIS coverage was determined by the *Standard Instructions*, or so-called Outline Guides, which had been worked out by a team of academics commissioned by the Joint Chiefs of Staff during World War II in connection with the Joint Army-Navy Intelligence Survey, predecessor to the NIS. Subsequently they had been revised by the then high-level interdepartmental NIS Committee, which met regularly under Captain Kenneth Knowles, Director of OBI. These guides asked hard questions (e.g., What is the relation of organized religion to the objectives and activities of the regime?), and they discouraged superficial answers, for the analyst was directed to describe gaps in intelligence and to say what he did not know, thereby providing feedback guidance to collectors. (Incidentally, one of the sections produced under Dr. Starr's direction, and long since retired to CIA archives,

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points to the religious-secular dichotomy as the most probable cause for instability in Iran.)

Success was fatal to the Research Division. It met its production schedules, and the two and a half years of its existence were the most rewarding time I have spent in the Agency. By late 1962 the Deputy Director of Intelligence was quoted as saying the only thing wrong with the division was that its work was not current. It became part of OCI in 1963.

That merger perhaps did not cause but certainly hastened the end of the NIS. The program had always been caught between idealistic, overly ambitious conceptual goals and practical limitation of resources. In OCI, and in other contributing offices too, the NIS workload pressed on demands for analysis of current problems. Moreover, managers interested themselves not in products of "common concern" but in projects more directly benefitting individual offices. As a result, qualified personnel were increasingly assigned to tasks considered of higher priority than the NIS.

Changing concepts of analysis continued to work against the NIS. Some of these changes, resulting from more diverse and complex intelligence interests, were understandable; others were less so. By the late 1960s the preoccupation seems to have been policy support rather than informational needs. It had become fashionable for office directors to pen comments like the following: "The emphasis has shifted from analysis of basic institutions to problem-oriented analysis in direct support of U.S. policy, plans, and operations."* The NIS, I am happy to say, did not keep up with this fashion. It tried to cover on-going change in the institutions of key countries, but often the neophyte researchers, many of whom were summer interns, were not up to this task. The result was poor quality work and, perhaps, some of the intelligence surprises of the 1970s.

Only a small division in the Office of Basic and Geographic Intelligence, where I then worked, had as its primary responsibility the production of the NIS. Its efforts to counter the negative attitudes toward the program that had come to prevail in other offices were in vain. And the division was, moreover, eroded from within: many of its supervisory positions were filled by "directed appointment," i.e., the assignment to the NIS of those higher echelon personnel in the directorate who, for one reason or another, were without higher priority jobs.

Despite all these developments, termination of the NIS was not easy. Two meetings of USIB, on 28 June and 19 July 1973, were required to modify the NSCID No. 3, which had established the program 28 years earlier. It went down, for the stated reason of budgetary limitations, despite protests from the Department of State and the military, whose representative at the USIB meetings reported that a survey of the services had ranked the NIS 11th in usefulness out of 131 intelligence products.

Termination of the NIS meant obliteration. No attempt was made to retain any element of its structure, although some adaptation of the interdepartmental NIS Committee, which had assigned production priorities and directed coordination, might have been useful. The program's staff was treated similarly. The 40 employees of the NIS Division were allowed six months of a work phase-out period to find jobs elsewhere in the Agency. As it was a time of retrenchment, many did not succeed. As it was also the time EEO programs were coming to the forefront, I was fortunate; in 1973 no one fired a middle-aged woman, and I went to work for the Office of Political Research.

*Memo from D/BGI to DDI, 10 July 1969 (SECRET).

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This office was established in 1974. It served in part to absorb the staff of the Office of National Estimates, which had also been abolished. The goals of OPR, as reportedly formulated by its creators, were to experiment with the new forms of analysis by applying them to intelligence, and also to fill high-level requests for research studies.

The trouble was that such requests were few and far between. Much of the office's time and energy were expended in advertising—that is, the preparation of the impressive semiannual prospectus to sell its papers, most of which were self-initiated and, in the end, were not produced. Few of the supervisors had experience in long-term research in the intelligence field, and the analysts did not know what they were supposed to be doing. One of my colleagues was assigned to research the Saudi educational system. After she spent a year translating original documents and after her supervisor, who had no background in the Middle East, devoted almost three months to rewriting the report, they discovered most of the material had been covered in an early NIS publication.

About this time it became apparent to me that OPR production, with a few exceptions, fell short of NIS coverage and that the days of the office were probably numbered. To avoid yet another period without a job, I fled to [redacted] on rotational assignment. OPR lasted until 1977. Then for the second time the Agency's political research endeavors were absorbed by OCI. The Office of Regional and Political Analysis was the result.

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When I returned to ORPA in December 1978, I suggested that my record with disappearing offices might make it advisable not to tempt fate by offering me a desk. I was, however, grudgingly allotted a slot on the T/O and perhaps an opportunity to work my way up again in yet another office. (One truism of office mergers is that the personnel of the smaller organization, below the supergrade level, drop to the bottom of the ladder unless they are friends of the new supervisors.)

While I have had only a few months to observe the latest reorganization, and admittedly lack basis for comment, I will say that several developments do not seem to follow previous patterns and may be salutary. First, the attempt to combine fully the production of current intelligence with research was, this time around, short-lived. The schizophrenia of ORPA was relieved in part by creating the Office of Current Operations in early 1979 and allocating to it at least some of the responsibility for current intelligence. Then the mandate of ORPA was clarified by dropping the mysterious "r" from its title. (For what is regional and political analysis, or the one without the other, in the intelligence field?) Now the former OCI'ers presumably have more time for longer-term research and analysis than they did when they were assigned to produce the NIS.

The other atypical development is a matter of mere appearance but may be significant. This is the first reorganization I have witnessed that has not resulted in larger, more luxurious offices for the supervisors of the research efforts. Having seen the crowded desk of the head of the Research Division in 1961 transformed through stages into the oriental splendor that surrounded the OPR director, I was not prepared for the return to austerity.

Previous reorganizations have not brought more space to the analysts and, in my opinion, have had an adverse effect on the climate for research. I do not refer to physical moves and such minor irritants as shifting and losing files. The effects that I have seen have been more subtly deleterious.

A climate for research and analysis is difficult to establish. The happiest ones in which I have worked have provided not only quiet but also an atmosphere in which

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opinions and ideas are freely exchanged when questions of substance or interpretation arise. Analysts and researchers being what they often are—a shy lot, introverted, and not very flexible—the rapport which makes such exchanges possible develops slowly. It will disappear for months or years when a reorganization brings in a new supervisor and a new personnel mix.

Reorganizations, I have found, tend to advance the careers of the more gregarious among the analysts. They are the ones who spend less time at the desk, have more contacts outside the office or division, and are adept at making themselves known and at the “cronyism” which seems to play a large part in advancement through the middle echelons of any agency. They are, in short, the so-called “operators.”

Women in particular do not fare well during periods of reorganization. Indeed the frequently changing offices and divisions within NFAC may be a factor in the directorate’s poor EEO record, which in 1978 showed that women held only 10 percent of the GS-14 jobs. For the most part, women seem to lack the qualities of the “operator,” but I do not believe this is the real problem. It seems to me that women are less successful in the Agency not because of female reticence or discrimination against them but rather because of a more subtle and probably unintentional exclusion—exclusion from discussions, planning, training, and ultimately from job opportunities.

Office reorganizations tend to further this exclusion. It has been my experience that women advance in the Agency under a sort of patronage system. When a supervisor finds a woman’s work of benefit, and often when she quietly assumes some of his workload, he will bring her name to the fore. When her office changes, she loses that patron, and it may take some time to find another.

Another reorganization of the research effort may not be in the immediate offing. At least the Office of Political Analysis, in its present form, is too large to be absorbed by the Office of Current Operations. Now the former OCI’ers, constituting the core of OPA, are responsible for the longer-term studies. Perhaps they will be relieved of current production to the extent that they will resist the temptations to live off past research or to depend on open-shelf publications, which are too often written to advance a thesis or prove a point to have more than limited intelligence value.

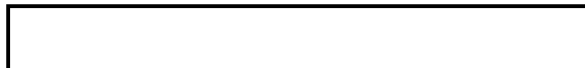
If this is indeed the case, I predict the following scenario: production will decline, Agency managers will re-invent the wheel, abolish OPA, and establish yet another office in which success is won and careers advanced by repackaging into new so-called “art forms” the results of previous research. Inherent in this scenario are the assumptions that the Agency’s understanding of and sympathy for research will be no greater than in previous years and that activities that are less immediately productive than others will not be defended during the budget review process. The scenario, I must admit, also draws on my cynicism, the result of 26 years with the Agency.

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Notes by two CIA Career Trainees

BEFORE THE FARM



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Entering on duty at CIA is an experience which requires patience, a sense of humor and an appreciation for the finer intricacies of bureaucratic existence. As a new recruit you are excited, intrigued and occasionally bewildered by an assortment of encounters which keep you alert, but at times a bit confused. You spend the first few weeks half lost in the halls at Headquarters or completely lost in a mental labyrinth of wiring diagrams filled with oblong boxes, cryptic acronyms and images of office infrastructure. But through this initial confusion, the newcomer will gain a general understanding of the Agency and an appreciation for the more peculiar aspects of bureaucratic logic.

On a more significant level, for the new recruit there is a feeling not so much of taking on a new job, but of embarking on a new way of life. After repeatedly being told "Welcome Aboard," it becomes clear that this is more than an unusual institutional idiom; it reinforces your belief that you are joining a country team; that starting a career here represents a break from the traditional life pursued on the "outside" and that you are taking a giant leap, if not from one world to another, then at least from dry land to the deck of something more turbulent and less predictable.

The authors claim no expertise regarding the business of intelligence or the nature of government, and yet some candid observations from those recently EODed might be amusing to older hands. With that in mind, here are some first impressions from new Career Trainees.

Personal expectations, both positive and negative, are shaken and realigned in the first weeks on the job. You may arrive expecting some fanfare after surviving weeks, or months, of testing and interviews to get here. Instead, you spend the first week filling out more forms than you have probably filled out in your entire existence. You and your fellow CTs are herded from one office to another like a squadron of bereft sheep. Those administering your arrival show you little deference and you may feel that you are not receiving the attention you deserve. Nonetheless, you endure it all, hopefully with grace, wit and perhaps a slightly ironic smile.

For those who may arrive with questions about what we have gotten ourselves into by joining CIA, reassurances of institutional sanity abound from the moment you first walk into the Headquarters building. The building itself exudes a sense of calm self-assurance that is distinctly different from the atmosphere of intensity that you might have expected. Inside, the environment is almost academic, with regimentation at a minimum. Crew cuts and relatively long hair seem to coexist peacefully, as do doubleknits and worsted wools. Individualism, visible in small ways everywhere, leads you to realize that you may have found something quite unique: a government agency that does not rely on a horde of drones to do its business.

Entering as a Career Trainee, you soon discover that you are part of a clearly identifiable peer group. You begin a practice of searching and probing the individuals in your class for some kind of commonality, in terms both of past experience and future expectations. This probing becomes almost second nature and, as you meet CTs

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from other classes, you ask them the same questions. The transition to the world of intelligence is perhaps more difficult for those arriving from the business and academic communities. But these individuals soon find a common relief when they discover that other reasonable people have reached the same conclusion as you: that, at CIA, espionage and integrity are compatible.

The orientation course, although a necessary item on the entry list, is an endurance test in some ways. The important thing for the CT is to gain a good overview of the Agency while combating the tedium of seemingly endless presentations of endless wiring diagrams. Also, it is difficult to feel that you are part of the whole, on the country team, while sequestered on the ninth floor of the CoC building, but the OTR staff does its best to bring you closer to the center by providing relevant lunchtime films and frequent "field trips" to different Agency offices.

In many ways, the five-week interim marked the true beginning of our careers at the Agency. We were no longer separated from the whole, no longer satellites floating about at other buildings. We were at Headquarters working on current intelligence projects with those who had field experience and reams of war stories to tell. It was our first special peek at the day-to-day business of intelligence, as well as our first view of the country team attitude put to work. Although the rumor mill continued to churn out its daily portion of "Did you hear that . . ." fare, conversations now drifted to topics of assignments and the unresolved question of divisions.

For perhaps the most persistent dilemma for all CTs bound for the Directorate of Operations is that of which division to go with. At the outset it seems as if everyone prefers Europe, but soon rumors about huge stations and slow promotions send people scattering to the four corners of the organizational globe. In a typical week you spend Monday mentally residing in AF, Tuesday in NE, Wednesday in EA, and by Friday you're back to thinking EUR might be best after all. The first interim assignment gives you a closer view of the puzzle, but no answers, and you conclude that time, long interims, and "The Farm" will help sort things out.

Since our class represented a major "bulge in the pipeline," things did not always run smoothly. The class was brought on board in two parts. These two parts would be together for the first month at The Farm and then split to join other CT classes. For a time, no one was sure where they would be when; the CT office, swamped in the flood of applicants for the next session, could not allocate much time for our questions.

Some of the mixups encountered during the first weeks warrant mentioning for their irony and humor. There was the speaker from the OTS gadget specialists who broke the microphone and couldn't get the slide projector to work. During the security briefing we saw some important films on security practices and measures but could barely hear them over the snores of the film projectionist. We had a briefing on the numerous insurance policies that the Agency offers, except that most of us were under cover and, therefore, eligible for only one specific policy. Probably the most bizarre briefing was our cover briefing/

[REDACTED]

[REDACTED] A former CT shared a bit of wisdom when she told us "Don't sign up if you can't take a joke."

[REDACTED]

What is it? It is spoken of at Headquarters with reverence often accompanied by moans, sighs and knowing grins. Some say it's a country club; you hear about the swimming pool, the gym, the volleyball courts, the jogging paths, the deer, the fishing. But we hear just as often that we'll be up all night every night working too hard to

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enjoy the amenities. We are curious about the courses and the instructors. Our expectations are high and the rumor mill has gone wild once more All that is certain is that we are all clearly anxious to get on with it.

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Intelligence Vignette

MISSIONS INTO CANADA, 1902

The governments and citizens of the United States and Canada are justly proud of sharing "the longest undefended border in the world." As late as 1902, however, the Military Information Division of the U.S. Army apparently held a somewhat less rosy attitude toward our northern frontier. In that year the MID addressed a confidential letter directly to the commanding officers of a number of frontier posts instructing them to organize tactical reconnaissance missions into Canada. The order called for the missions to be led by officers carefully selected for their tact and ability.

The purpose of the intrusions into Canada was given as maintaining, on an up-to-date basis, military maps of certain areas in the Canadian provinces adjacent to the United States.

The maps prepared from the intelligence collected from this effort were considered highly confidential and were never published.

[Memo, Adjutant General for Lt. Gen. Commanding the Army, 17 March 1902, AWC 639-14, Records of the WDCS, U.S. National Archives.]

Previous to the 1902 effort, which assigned the Canadian task to a number of commanders, reconnaissance of Canada had been conducted as isolated missions. In 1885, for example, Captain Daniel M. Taylor had been directed by the Secretary of War to conduct a personal reconnaissance along the Great Lakes and the St. Lawrence River in order to obtain military information about these strategic areas. In 1890, 1st Lt. A. S. Rowan [of later Spanish-American War fame] was detailed to examine the entire line of the Canadian-Pacific Railroad and to secure pertinent military information about the rail system.

From the Historical Intelligence Collection

INTELLIGENCE IN RECENT PUBLIC LITERATURE

BAY OF PIGS, by *Peter Wyden*. Simon and Schuster, New York 1979. 352 pp.

In the history of the early Kennedy years, the Central Intelligence Agency, and in the lives of those involved, the Bay of Pigs was only an episode—but what an episode! Camelot's escutcheon was blotted and covert action failed in a blast of publicity at a time when revelation was exceptional rather than, as recently, routine. The career of the genial spymaster Allen Dulles dwindled to an ungraceful end; his heir apparent, the brilliant intelligence innovator Richard Bissell, was banished to corporate hinterlands.

In the wake of the fiasco at the Bay of Pigs a modest wave of literature about the event was generated. Most of it was useful, some was quite good, and all of it was fragmentary. Haynes Johnson's excellent *The Bay of Pigs* in 1962, for instance, was largely the version of the story as related by Cuban exiles.

Now there is a definitive work: *Bay of Pigs*, by Peter Wyden. It is difficult to anticipate a future study which will add much to this account. A Book-of-the-Month Club main selection, the work will reach a popular audience, and it contains enough fresh material to make it a basic reference for scholars and political scientists. Wyden, a professional journalist, has mined the trove of information available under the Freedom of Information Act. But what makes the difference is that he has managed to interview nearly all surviving, senior participants, including retired CIA loyalists who would not, or could not, speak out before. (Apparently he did not talk to Howard Hunt, although he does draw on Hunt's subjective *Give Us This Day*; and the Pentagon colonel seconded to the Agency for military planning refused to see him.) In Havana Wyden interviewed Cuban veterans, among them the ultimate anti-CIA critic, Fidel Castro. This access to new primary sources has been meshed with several years of diligent investigative plodding. The result is a clear view of the Bay of Pigs, in the past only partially discernible through the haze of half-history.

The primary reason—first among many—that the operation was in jeopardy early on was the injudicious escalation from guerrilla warfare to military invasion approved or tolerated by Bay of Pigs planners. None of us who were involved—from CIA, the Kennedy White House, the Pentagon—can or should be exonerated from blame. But a retrospective scrutiny of the failure must focus on what went on in the minds of two remarkable men, John Fitzgerald Kennedy and Richard Bissell. In the case of the former president, Wyden believes that Kennedy approved the operation because he was a new, action-oriented leader disinclined to question a military venture endorsed by Eisenhower, the man who won World War II for the Allies. He speculates that Kennedy received poor counsel from his White House advisors because they were the victims of what Wyden calls "assumed consensus," a bureaucratic malady akin to groupthink. His arguments are convincing.

The author is less successful when he attempts to illuminate the character of Richard Bissell and to explain his actions. Wyden leaves this reader with the impression that he is not really sure *what* he thinks about Bissell. Perhaps the enigma of Richard Bissell's mind will never be fully resolved by any writer, even one of us who knew him well.

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Wyden tends to believe that the Bay of Pigs operation would have gone awry even if President Kennedy had not canceled the D-Day air strike. Who can be sure, now? But one observer saw the lack of support to the exiles as vital: Fidel Castro, when asked why the Americans failed, replied, "They had no air support."

The sourest note in Wyden's book is his final sentence, his conclusion: It can happen again.

I doubt it, not in our lifetimes, anyway.

Bay of Pigs, despite some hard knocks it gives CIA, is as objective an account of the ill-fated operation as the intelligence community can expect (the shrillness of Book-of-the-Month Club blurbs and Wyden's talk-show appearances must be attributed to the exigencies of promotion). And, *Bay of Pigs* is, on balance, good history and good reading.

David Atlee Phillips

Intelligence Vignette

THE SPY WHO WENT TO THE MOUNTAIN

In 1806, the United States considered it essential to conduct a military reconnaissance of the entire territory drained by the Arkansas and Red Rivers. Selected to lead the intelligence mission was Lieutenant Zebulon Montgomery Pike, a reliable young officer who, the previous year, had conducted an exploration of the upper course of the Mississippi River.

The cover story selected for the mission was that the expedition was returning a party of Osage Indians to their homelands. Further, if he encountered Spanish forces, he was to contend that he was traveling to the isolated American outpost at Natchitoches, but had lost his bearings. To reinforce his cover story, it was hoped that he might be able to pay a courtesy call to the Spanish *comandante* at Santa Fe.

On 3 December 1806, Lieutenant Pike first saw the inspiring peak in the Colorado Rockies that was later to bear his name.

Shortly thereafter, Pike's expedition was overtaken and captured by Spanish troops. They were taken first to Santa Fe and then to Chihuahua. The party was finally released and succeeded in reaching Natchitoches on 1 July 1807.

Pike's personal journal of these travels was published, over some military objection, in 1810. It is said to have been one of the few reliable military intelligence documents concerning Mexican territory in the possession of the War Department at the outbreak of the Mexican War some thirty years later.

Commissioned a Brigadier General at the outset of the War of 1812, Pike was killed at the Battle of York (Toronto), Canada, in April 1813. He was 34.

From the Historical Intelligence Collection

Books

THE STORM PETRELS, by *Gordon Brook-Shepherd*. Harcourt, Brace & Jovanovich, New York 1978. 241 pp.

Gordon Brook-Shepherd in this well-researched book treats the experiences of five important apostate Soviet officials who fled the USSR in the period 1928-1938. In the analogy of the title, they were the storm petrels whose appearance presages the flight of other creatures from an atmospheric disturbance not yet visible to the observer. The inspiration of the book can be traced to Brook-Shepherd's extensive interviews with Boris Bajanov in Paris. Bajanov had at one time served J. V. Stalin as a secretary and, as such, had an opportunity to observe how business was conducted at the higher reaches of the Party during the long battle in the Kremlin over Lenin's succession. Bajanov, having witnessed the banishment of Trotsky and the ascendancy of Yagoda, left Moscow in the autumn of 1927 with the intention of escaping across the border into Persia.

In late December he received a permit to hunt boar near Ashkhabad in the company of one Birger, an OGPU captain, who was charged with Bajanov's eventual safe return to Tashkent. Near the border, on New Year's Day 1928, Bajanov offered his companion the options of being shot on the spot or accompanying Bajanov into Persia. Birger, realizing that his mission had failed and all that that fact implied, saw little merit in lingering on Soviet soil.

They traveled south by hill pony, Hupmobile, camel and, finally, by train to Simla, the summer seat of the Raj in British India, where the pair was genteelly debriefed for the first time.

The preliminary British report from Simla, 58 pages in length, was distributed to interested departments throughout India, to British missions in the Near and Far East, as well as to London. Although the Simla authorities urged further questioning in London, the Foreign Office declined to cooperate and, with self-congratulatory cleverness, suggested that the couple be diverted to France. The French authorities welcomed their arrival and Bajanov was particularly gratified since France had always been his intended goal.

Thirteen months after Bajanov's arrival in Paris, Grigory Bessedovsky, charge d'affaires at the Soviet Embassy there, climbed the wall surrounding the embassy courtyard and sought French protection. Because the Ambassador was absent from his post, the French recognized Bessedovsky as the Acting Chief of Mission and declared their solemn obligation to provide protection to him and his family.

Soon after his escape, Bessedovsky contacted the right-wing press and wrote several articles condemning the Soviet regime. Shortly thereafter he succumbed to a better offer from the left-wing emigre press and did a series of contradictory pieces which had the effect of lending credence to the Soviet contention that he was deranged. Bessedovsky's precipitate departure from the fold, as well as subsequent revelations, suggest that financial opportunism rather than ideological apostasy fueled his flight.

Ten months later a new fugitive from Socialism in the East arrived on the Paris landscape. The newcomer was Georgi Agabekov, an OGPU chief, who two years before had led the opera bouffe search for Bajanov in and about Meshed, Persia. In October 1929 Agabekov was recalled to Moscow and given a new assignment: The elimination of Bessedovsky in Paris by Myer Trilliser, then head of the Foreign Section

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of the OGPU. The following day the mission was canceled and Agabekov was dispatched to Constantinople to take up duties as head of the illegal nets in the region. On arrival in Turkey he advertised for a tutor to provide him with English-language instruction. One of the respondents to his newspaper advertisement was a young English woman with whom he was immediately smitten. Agabekov's love for Elizabeth Streater eventually led him to abandon his duties and escape to France. He married Elizabeth and the couple survived on the limited income he earned as an occasional source for both the British and French intelligence services. His knowledge of clandestine techniques and his ready availability for spot commissions induced the Soviet service to construct a complex provocation operation, calculated to end in Agabekov's abduction or death. The plan resembled a garnished East European version of the "Mexican Prisoner con." The plan aborted and for several years afterward was popularized in the public domain as the "Philomena Affair."

When Yezov replaced Yagoda as Stalin's police chief in 1936, the Old Chekists had cause for apprehension. Many of the NKVD chiefs serving abroad were recalled and, initially, reassured of another posting and encouraged to take leave with their families in the South. A few then wrote letters to colleagues still in foreign countries, explaining that there was no real basis for hesitating to return to Moscow. Having induced a few others to return, their utility to Yezov was exhausted, and they were arrested and executed. The purge of the NKVD was in train.

Ignace Reiss, a senior NKVD chief in Western Europe who saw his immediate superior, Galinsky, fall victim to Yezov's cunning, bolted on 17 July 1937 and denounced Stalin. His remains were found seven weeks later in Switzerland; he had been "rendered harmless" by a mobile squad dispatched by Yezov. The death of Reiss was an unequivocal signal to others of Stalin's determination to cleanse, permanently, the memories of NKVD veterans who had guilty knowledge of his bloody rise to absolute power. Alexander Barmine decamped as Soviet charge d'affaires in Athens. Walter Krivitsky fled his illegal post in Holland, General Alexander Orlov escaped from Spain through Paris and General Lyushknov, NKVD commander in the Far East, sought refuge in Japan.

Brook-Shepherd, who claims no prior intelligence experience, has put five important apostate Soviet officials into a coherent context. Each of the principals had previously written memoirs which the author has corrected and complemented with official documentary materials from U.S., British, British-Indian, French, Belgian and non-communist Romanian files, most of them hitherto unpublished. In addition to Bajanov, the author interviewed Hede Massing, Mme. Agabekov and others with direct knowledge of the events described.

Refreshingly, the author does not dwell nor exhaustively speculate on motivation. Instead, he quite correctly notes that each of the five found himself measuring his life expectancy in hours and each took the sensible option which favored survival. Imputations of lofty motives and sociological complexities were indulgences which came later.

Both the Orlov and Krivitsky cases resulted in prosecutions in the United States and Britain. Krivitsky identified Capt. John Herbert King, a Foreign Office cypher clerk and Soviet agent, in the course of his London debriefing conducted by Jane (not "Janet") Archer of M1-5. Miss Archer, to whom Krivitsky described—but could not name—a British agent of the Soviets who was then with the Franco forces in Spain, later in the war served in Kim Philby's Iberian section of M1-6. (See *My Secret War*, by H.A.R. Philby). Jane Archer is believed by some to have been the model for LeCarre's "Connie Sachs."

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The Storm Petrels is in some respects a catalogue of intelligence opportunities lost. The reader is made uneasy by the seemingly abstruse swivelling of the beneficiary governments and the obduracy of the fixed opinions held by officials. Despite the effusive courtesy shown Bajánov by the British political establishment in Simla, Whitehall saw him as a tale-bearing political opportunist, denied him entry into Britain, and fobbed him off on the French.

Orlov in a private meeting with the U.S. Attorney General and the U.S. Commissioner of Immigration and Naturalization was able only to incite those appallingly incurious gentlemen to accede to his remaining in the country. All that they asked of him was his verbal assurance that he would not become a ward of the state; no record was made of the meeting. Fifteen years later, with the death of Stalin and the publication of a four-part series by Orlov in *Life* magazine, he was discovered and subjected to very aggressive handling by the FBI.

There is much in these essentially accurate accounts to raise more important considerations. Brook-Shepherd implies that these events are part of a continuing process which has yielded up informational treasure for 60 years. He is correct. *The Storm Petrels* warrants reading because it stresses the importance of intelligence and counterintelligence opportunities which sometimes attend unplanned events. It also begins to give a long deserved dignity to the role of the "accident" in intelligence successes.

Robert Crowley

Intelligence Vignette

FINAGLE'S FIFTH LAW OF INFORMATION

In his magisterial *The Official Rules*,* Paul Dickson attributes to the immortal Finagle four Laws of Information which have obvious application to intelligence work. In the belief that these laws should be committed to memory by every intelligence officer and project manager, the Editors reprint them below, together with the newly discovered Fifth Law of Information contributed by Dr. Bernard Mooney, a lineal descendant of the Hibernian Sage.

Law I: The information you have is not what you want.

Law II: The information you want is not what you need.

Law III: The information you need is not what you can obtain.

Law IV: The information you can obtain costs more than you want to pay.

Law V: What you are willing to pay will get you exactly that information you already have.

* *The Official Rules*, by Paul Dickson, Delacorte Press, copyright 1978 by Paul Dickson.

Books

A STATION IN THE DELTA, by *John Cassidy*. Scribner's, New York 1979. 380 pp.

Intelligence work and the war in Vietnam are two subjects which have proven difficult to render with both accuracy and conviction in fictional form. John Cassidy, in *A Station in the Delta* attempts to do both. From the point of view of one who has served in Vietnam, the results are mixed.

Mr. Cassidy, a retired CIA officer who served in Vietnam, sets his book in the Delta late in 1967. Toby Busch, the central figure in the story, is what was called a "POIC" or provincial officer in charge. Busch's arrival in the flat and desolate provincial town is well rendered, as are many of the initial impressions he receives of those with whom he will work. Also appropriately reflected are the differing points of view toward the war which appeared at the provincial, regional, and Saigon levels of the CIA structure: Saigon thought the war was being won, those in the provinces believed it was being lost.

I found particularly well described Busch's sense of apprehension as, for the first time, he finds himself in a wartime setting. His reactions to the ominous presence of weapons and the constant possibility of violence recalled vividly my own first reactions to the regional town in which I spent almost two years. During his first night in his new quarters Busch is saved from a B-40 rocket only by his fruitless search for toilet paper. What happens to Busch in terms of combat experience is what I imagined might happen to me, but never did. Busch goes on almost single-handedly to stop a Viet Cong attack on his town; I was shot at only in helicopters and never fired a weapon. The combat sequences in the book have very much of a one-dimensional quality to them, and are not rendered with nearly the depth of feeling with which Mr. Cassidy describes the Vietnamese people with whom he lives and works.

I found Mr. Cassidy's depiction of the Vietnamese culture and his own blundering attempts to deal with it to be the strongest part of the book. Mr. Cassidy obviously had some deep relationships with the Vietnamese during his own tour and the texture of these relationships comes through quite vividly. The strength and fatalism of the Vietnamese, which I found everywhere during my own tour, Cassidy renders with real strength.

Somewhat less effective are the depictions of Busch's relations with his CIA co-workers and superiors. There is a subplot involving a latent stain on Busch's professional escutcheon which is resolved at the climax of the book. I found this account of bureaucratic conflict somewhat overdone, but no more so than the combat scenes which pepper the narrative.

There is a fair amount of sex depicted. Busch, a previously faithful husband, quickly acquires a Vietnamese mistress and also has one vivid encounter with an American nurse. Cassidy portrays accurately the latent sexuality which pervaded Vietnam. He deals compassionately, in my view, with the reactions and behavior of men suddenly freed from all family restraints who found themselves working and living against a background which was both threatening and inviting, sometimes in the extreme.

Cassidy writes knowledgeably of intelligence work. His descriptions of Busch's initial meetings with his Vietnamese counterparts, his reaction to the lack of hard intelligence and the preponderance of rumors, the mixed degree of competence which

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Vietnam officialdom represented, and his first meetings with his Vietnamese agent are all well done. These sections of the book, if any, justify this review in *Studies in Intelligence*.

Cassidy's writing is for the most part rather flat, although he is capable of occasional bits of dialogue or descriptive phraseology which drew me back to my own time in Vietnam. Cassidy obviously feels strongly about his experiences there, and I hope that he will try to write another book on the subject, perhaps trying to cover less ground and placing more emphasis on the haunting and ultimately tragic relationships between Americans and the Vietnamese which were spawned in that prolonged conflict.



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Intelligence Vignette

MOLES

It has become fashionable in media circles to talk about "moles"—those persons who might penetrate CIA or other intelligence entities from within on behalf of our enemies. Part of the fascination of the media with the word "mole" is their belief that this is a new word in this context, probably coined by the British spy-novelist, John Le Carré, in such works as his *Tinker, Tailor, Soldier, Spy*, published in 1974. Nothing could be further from the truth.

The following quotation is taken from *The Historie of the Raigne of King Henry The Seventh*, written by Francis Bacon, Lord Verulam, Viscount St. Alban, and published in London in 1622:

"Hee was careful and liberall to obtaine good Intelligence from all parts abroad. Wherein hee did not onely use his Interest in the Leigers here, and his Pensioners which hee had both in the Court of Rome, and other the Courts of Christendome; but the Industrie and Vigilancie of his owne Ambassadors in Forraine parts. . . . Requiring likewise from his Ambassadors an Answere, in particular distinct Articles, respectively to his Questions.

"As for his secret Spialls, which hee did imploy both at home and abroad; by them to discover what Practices and Conspiracies were against him, surely his Case required it: Hee had such Moles perpetually working and casting to undermine him. Neither can it bee reprehended. For if Spialls bee lawfull against lawfull Enemies, much more against Conspirators, and Traitors."

Walter Pforzheimer

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BRIEFLY NOTED



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UNITED STATES DIPLOMATIC CODES AND CIPHERS, 1775-1938, by *Ralph E. Weber*. Precedent Publishers, Chicago 1979. 633 pp.

Relying heavily on original documents, Mr. Weber has provided fresh insights and much new information on the diplomatic codes of the United States. In the process the author has produced a positive addition to the literature of cryptography. The emphasis is on the earlier years of the Republic, with the post-World War I years receiving a less thorough treatment. The writing is a bit ponderous, but the reader will be amply rewarded for his patience.

THE ROTE KAPELLE: THE CIA'S HISTORY OF SOVIET INTELLIGENCE AND ESPIONAGE NETWORKS IN WESTERN EUROPE, 1936-1945. University Publications of America, Washington, D.C. 1979. 390 pp.

The "Rote Kapelle" was the cryptonym used by German security officials for Soviet espionage networks in Europe. Set up long before the war, these nets redirected their efforts against Nazi Germany early in 1940. This exhaustive study, fascinating in its own right, is also useful as an example of the standard Soviet espionage net. Probably the only book on the subject worth reading.

THE MAGIC BACKGROUND OF PEARL HARBOR, published by U.S. Department of Defense, Washington 1978. For sale by the GPO. Five volumes in eight parts.

These volumes were originally compiled in the years 1944-46 as a highly classified history of the Cordell Hull-Admiral Kichisaburo Nomura negotiations which took place from 14 February to 7 December 1941. Besides material from Mr. Hull's records and decrypted Japanese diplomatic messages, there are included decrypted dispatches dealing with Japanese espionage and diplomatic activities worldwide. These volumes, although not light reading, provide the source material needed for a more complete history of this period.

HEARINGS AND REPORT OF THE SELECT COMMITTEE ON ASSASSINATIONS, U.S. House of Representatives. U.S. Government Printing Office, Washington, D.C. 1979. 13 v.

The Final Report (also available in Bantam paperback) presents the Committee's findings on their investigation of the intelligence community as regards the John F. Kennedy assassination. The record of hearings includes the testimony of John Hart, Richard Helms, Yuri Nosenko and "Mr. D.C." (former Deputy Chief, SB Division). Also of interest are the Committee's studies on defectors, CIA plots against Castro, and CIA support to the Warren Commission.

Books

THE UNTOLD HISTORY OF ISRAEL, by *Jacques Derogy and Hesi Carmel*. Grove Press, distributed by Random House, New York 1979. 346 pp.

This is the American edition of a European best-seller. The authors, reporters for *L'Express* magazine, spent 10 years on research, using both archive material and personal interviews. They present a sensational account of the founding and development of the Jewish State. Included is the secret history of: the peace process, the Yom Kippur War as intelligence failure, and the "Lavon Affair."

THE BUREAU: MY THIRTY YEARS IN HOOVER'S FBI, by *William C. Sullivan*, with *Bill Brown*. Norton, New York 1979. 286 pp.

The late Mr. Sullivan was once the number three man in the FBI, Assistant Director in charge of Domestic Intelligence. His anecdotal record of the crimes of J. Edgar Hoover is shocking, self-serving and bound to be widely read. The author gives us only one chapter on espionage, but it includes an interesting story on an alleged "mole" in the FBI's New York Field Office. But Mr. Sullivan's spiteful catalog of the Director's sins of commission and omission after Hoover's (and indeed his own) death is ultimately a case of too little, too late.

PROPAGANDA IN WAR, 1939-1945: ORGANIZATIONS, POLICIES AND PUBLICS IN BRITAIN AND GERMANY, by *Michael Balfour*. Routledge & Kegan Paul, Boston 1979. 520 pp.

Mr. Balfour attempts to explain the nature, uses and dilemmas of propaganda by comparing the methods used by the British and the Germans on both the enemy and the home front. His approach is intriguing but his book is not. So extensive is his use of examples that any sense of narration is lost. It is unfortunate that in a book so obviously full of information worth recording, the only enjoyment is found in trying to puzzle out the author's eccentric system of footnoting.

THE OFFICE OF NAVAL INTELLIGENCE: THE BIRTH OF AMERICA'S FIRST INTELLIGENCE AGENCY, 1865-1918, by *Jeffery M. Dorwart*. Naval Institute Press, Annapolis, MD 1979. 173 pp.

Dr. Dorwart should have subtitled his work "an outline." He obviously has a good feel for what is important and interesting in the history of ONI, but he doesn't do his material justice. This highly compressed history, although well researched, merely strings together a series of facts with nary a transition or an interpretation. A good guideline for the next work on the subject.

SELF-DESTRUCT: DISMANTLING AMERICA'S INTERNAL SECURITY, by *Robert Morris*. Arlington House, New Rochelle, New York 1979. 348 pp.

Judge Morris, former chief counsel to the Senate Internal Security Subcommittee, believes that America is a "beleaguered island in a rising sea of totalitarian despotism." Using Committee files and testimony, the author provides thumbnail sketches of some

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interesting intelligence cases—Philby, Bang-Jensen, Hiss, and E. Herbert Norman. Unabashedly biased, it is still somewhat useful as an index to the Committee's own publications.

A DANGEROUS GAME: CIA AND THE MASS MEDIA, by *Vitaly Petrusenko*; translated from Russian by Nicolai Kozelsky and Vladimir Leonov. Interpress, Prague [1978?], 175 pp.

A propaganda piece, this book contains nothing new. The author simply replays previously published items, predominantly from Western sources, on the CIA's use of the media to undermine the forces of peace and progress. The only thing the author contributes is, in his own words, a "definite perspective." The publishers might find a larger audience if they invested in a better grade of paper and print.

Intelligence Vignette

AGENT QUALIFICATIONS IN THE REVOLUTIONARY WAR

George Washington insisted that personnel engaged for the intelligence service be men of "ingenuity & integrity," and frequently sought out specialists for assignment when such skills were needed. In May 1780, for example, Washington instructed General Heath to dispatch two agents "upon whose firmness and fidelity we may safely rely" to satisfy a requirement from the French for intelligence of fortifications at Halifax, Nova Scotia. One of those selected was James Bowdoin, later to become the first president of the American Academy of Arts and Science, who returned with detailed plans of the harbor, including water depths. Although Washington insisted that American intelligence personnel be those "suitable persons . . . to whom a confidence may be reposed," he moved quickly against those intelligence agents "employed to go onto Long Island on the pretence of procuring intelligence [who have turned the mission into] mere plundering parties." He insisted on a full investigation and, if guilt be found, "the punishment may be adequate to the guilt." One of Washington's intelligence officers, General Charles Scott of Virginia, was noted for "his ability to locate ideologically motivated" intelligence personnel. Even Thomas Jefferson, in directing General Muhlenberg to attempt a behind-the-lines capture of Benedict Arnold, specified the criteria for the men to be employed in the hazardous mission: "Having a particular confidence in the men from the western side of the mountains . . . get the enterprise proposed to a chosen number of them, such, whose courage and fidelity would be above all doubt. Your perfect knowledge of those men, personally, and my confidence in your discretion, induce me to ask you to pick from among them proper characters. . ."

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