Avoiding Surprise:
The Role of Intelligence Collection and Analysis At the Operational Level of War

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ABSTRACT

AVOIDING SURPRISE: THE ROLE OF INTELLIGENCE COLLECTION AND ANALYSIS AT THE OPERATIONAL LEVEL OF WAR. by MAJ Brian A. Keller, USA, 59 pages.

This monograph discusses whether U. S. Army operational commanders are still susceptible to surprise. The principle of surprise remains an important consideration for campaign planners. Operations Just Cause and Desert Storm relied heavily on surprise to establish the conditions for success. Yet, recent advances in intelligence technologies may have rendered surprise obsolete. Many believe that "perfect intelligence," seemingly assured by sophisticated surveillance and reconnaissance systems, makes surprise unlikely during modern warfare. The large scale of modern operations and "near-real-time" information processing also makes surprise questionable. In short, advanced intelligence and command and control capabilities, combined with Army doctrinal emphasis on "predictive intelligence," could lead campaign planners to disregard enemy efforts to achieve operational surprise.

The monograph first explains the theoretical causes of surprise. Based on these considerations, a paradigm is provided to examine the causes of operational surprise. Two historical case studies—the 1944 German Ardennes Offensive and the 1973 Yom Kippur war—demonstrate recent examples of why surprise succeeds. The Ardennes Offensive shows why surprise succeeded despite extensive and timely—collection capabilities from Ultra, prisoners of war interrogations, and imagery products. The Yom Kippur War illustrates how bias, self-deception, overconfidence, and careless considerations of enemy capabilities leads to surprise.

The study concludes that, despite modern collection technology, surprise is still possible at the operational level of war for three reasons. First, enemy deception and security measures can blind or confuse even modern sensors. Second, the fog and friction of war, combining poor weather, masking terrain, uncertainty, and false or ambiguous reports, remains a constant factor during modern operations. Finally, faulty intelligence analysis, sometime swayed by biases, predilections, or preconceptions, often obscures actual enemy intentions or capabilities.

The monograph offers several recommendations to limit the likelihood of surprise at the operational level of war. These include synthesizing collected information to identify trends and explain their meaning to commanders, the greater use of political intelligence at the operational level, injecting surprise into peacetime exercises and simulations, and finally developing contingency plans or branches for worse case enemy scenarios.

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I. INTRODUCTION

"Eyes have they, but they see not. They have ears, but they hear not."

- Psalms, 115:5-6

"We are never deceived, we deceive ourselves."

- Goethe

"It is pardonable to be defeated, but never to be surprised."

- Frederick the Great

Since antiquity, commanders have sought surprise against their adversaries. This is especially true for twentieth century warfare considering most major wars and many campaigns began by surprise attacks. During the Second World War, for example, at least one successful surprise attack was launched against each of the great powers.[1]

Recent advances in intelligence technologies, however, may have rendered surprise obsolete. Many believe that "perfect intelligence," seemingly assured by sophisticated surveillance and reconnaissance systems, makes surprise unlikely during modern warfare. The large scale of modern operations and "near-real-time" information processing also makes surprise questionable.

Current Army doctrine continues to stress the friendly use of surprise. Operations Just Cause and Desert Storm relied on surprise to set the conditions for operational success. Ironically, campaign planners appear more likely to overlook their own susceptibility to surprise. Advanced intelligence and command and control capabilities, combined with Army doctrinal emphasis on

"predictive intelligence," could lead campaign planners to disregard enemy efforts to achieve operational surprise.

This monograph examines whether U.S. Army operational commanders are still susceptible to surprise. My criteria center on two factors. First, can operational level intelligence organizations provide their commanders with timely intelligence concerning an enemy's *capabilities*? Second, can these same organizations determine the enemy commander's *intentions*? This paper evaluates intelligence collection capabilities and analytical procedures against these criteria to determine whether surprise is still possible.

The monograph begins by explaining the theoretical causes of surprise. Based on these considerations, a paradigm is provided to examine the causes of operational surprise. Two historical case studies—the 1944 German Ardennes Offensive and the 1973 Yom Kippur War—demonstrate recent examples of why surprise occurs. The final section offers recommendations that might help reduce the potential for operational surprise.

Before proceeding, it is necessary to define "operational surprise." Webster's dictionary defines surprise as "1. to come upon suddenly or unexpectedly; take unawares[.] 2. to attack or capture suddenly and without warning."[2] Military surprise involves an unexpected action delivered against an adversary. Surprise normally involves a failure to predict a particular enemy course of action. Yet, a proper prediction rendered to commanders with insufficient warning time can also lead to surprise.

At the operational level of war, the enemy seeks victory through the use of large scale operations or campaigns. Thus, I

define operational surprise as *an unexpected enemy action in a theater of war specifically linked to achieving decisive results through the use of operations or campaigns.* Having defined operational surprise, the next section addresses how operational surprise results.

II. HOW OPERATIONAL SURPRISE RESULTS

Field Manual 100-5, *Operations*, lists three ways to achieve surprise. First, a friendly force can operate "in a manner contrary to the enemy's expectations."[3] Second,

> surprise can . . . be created by radically altering the structure or tempo of the battle. For example, the insertion of airborne, airmobile forces or special operating forces deep in the enemy's rear can sharply and suddenly increase the enemy's sense of threat, sowing fear and confusion, and in the extreme case, inducing outright paralysis.[4]

Finally, "surprise can be achieved by manipulating the enemy's expectations through deception, feints, and ruses."[5]

It is important to note that FM 100-5 stresses the importance of surprise for offensive operations. Moreover, the manual emphasizes methodology to achieve surprise, but offers little explanation on the necessity of preventing surprise. While seemingly subtle, significant differences emerge between *achieving* and *avoiding* surprise. To prevent surprise, commanders and intelligence staffs must focus on the primary causes of surprise. How, then, does operational surprise occur?

Operational surprise results from misjudging at least one of many interrelated elements. Intelligence analysts can overlook or misread the enemy's *capability* to execute a course of action. Analysts or decisionmakers may overlook, disregard, or misread the

enemy's *intentions* or their actual objectives. Insufficient *warning time* can allow the enemy to act faster than the required response needed to offset his actions. Finally, ambiguous, misleading, or distracting information—referred to here as *noise*—can confuse analysis of observed enemy intentions or capabilities.[6]

In sum, the likelihood of operational surprise increases when any of these elements infiltrate the intelligence estimate. Richard K. Betts reinforces this view in *Surprise Attack: Lessons for Defense Planning*. Betts writes:

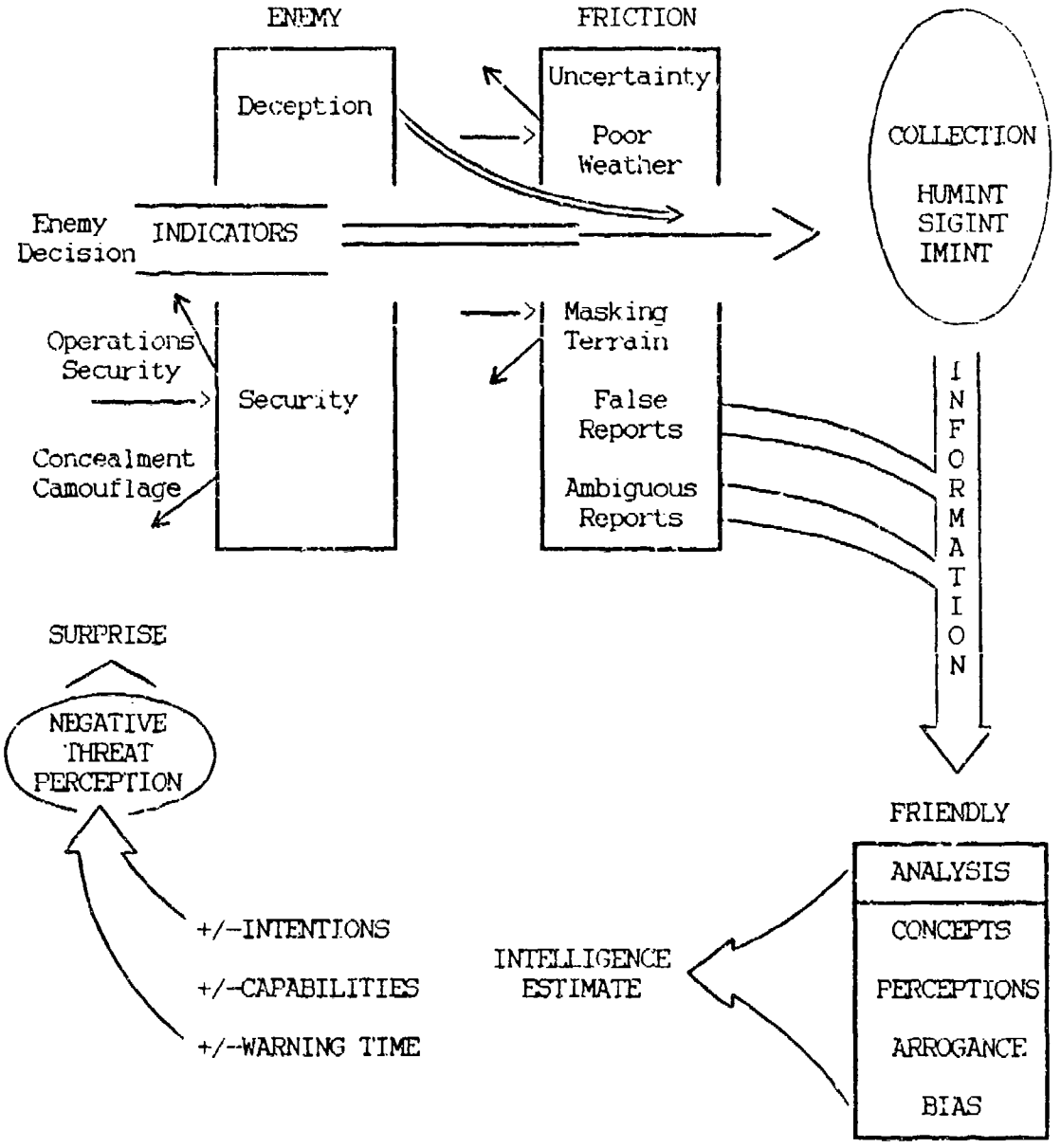
> Misreading military indicators of capability and when, where, or how an enemy will attack is the proximate source of surprise. Misjudgment about whether an attack will occur is a more fundamental factor. . . . Mistaken estimates about 'whether' are reinforced by a failure to appreciate 'why'—the motives and the cost-benefit calculations of the attacker.[7]

Conversely, besides adequate warning time, an accurate assessment of the enemy's capabilities, intentions, and objectives is a prerequisite for warning. Assessments generally begin as a working hypothesis. The hypothesis explains facts or indicators gathered by available intelligence collection means. Only after analysis does the hypothesis develop into a deduction concerning the probable meaning of the collected information. Predictions of probable enemy course of action—delineated in intelligence estimates—reflect this deduction. However, commanders view these deductions—or estimates—only after collected information and indicators flow through three prisms.

The first prism involves enemy actions. Here, enemy deception and security measures may conceal their true capabilities or

intentions. Second, friction generated by uncertainty, poor weather, masking terrain, and false or ambiguous reports may further mislead commanders. Finally, analysis fused from faulty perceptions, preconceptions, arrogance, or biases further obscure accurate assessments of enemy actions. Taken together, the views refracted through each prism sometimes emerge as negative threat perceptions. Diagram 1 below illustrates these ideas.

Diagram 1: The Causes of Operational Surprise



With these considerations as background, the 1944 German Ardennes campaign and the 1973 Yom Kippur War provide historical case studies to show why surprise occurs at the operational level of war.

III. HISTORICAL CASE STUDIES

The Battle of the Bulge

During the early morning of 16 December 1944, twenty-nine German divisions began the last great counteroffensive of World War II. This counteroffensive is a classic example of operational surprise. The magnitude and objective of the German attack escaped the scrutiny of Allied commanders and their intelligence chiefs.

Prior to 16 December 1944, Allied intelligence collected a considerable amount of signals suggesting a German counteroffensive. Three primary sources provided this information: enemy prisoners of war; aerial reconnaissance; and strategic intelligence from intercepted German wireless messages, (code named Ultra).[8]

Allied interrogation of German prisoners produced some startling revelations of the coming attack. On 21 November 1944, a German prisoner revealed he had seen a secret order for recruiting English-speaking German soldiers. These men, equipped with American uniforms and weapons, would conduct sabotage and reconnaissance missions behind American lines. This order was later captured and reported in a 10 December First United States Army (FUSA) Intelligence Estimate No. 37. The estimate stated:

> A captured order for a comb-out of selected personnel speaking the American dialect to report to HQ SKORZENY at FRIEDENTHAL . . . by 1 November, obviously presages special operations for sabotage, attacks on [command posts] and other

> vital installations by infiltrated or parachuted specialists. An extremely intelligent [prisoner of war] whose other observations check out exactly with established facts stated that every means possible is being gathered for the coming all-out counteroffensive.[9]

Another high ranking German prisoner disclosed newly created special assault divisions would lead a large-scale breakthrough. Other prisoners captured on 12 and 13 December corroborated this report telling interrogators the elite *Grossdeutschland* and 116th Panzer Divisions—known as the "blitz" divisions—were moving into the "quiet sector."[10] (The *Grossdeutschland* Panzer Division actually remained on the Eastern Front. The division did however transfer one panzer battalion with anti-tank and engineer units to the Western Front. After locating this element, Allied intelligence officers incorrectly placed the entire division in their order of battle).[11] Still another prisoner captured 13 December from the 17th SS Panzer Grenadier Division stated he was delivering a verbal message announcing "last night's message ordering your retreat was false. Everyone is to hold and prepare for a counter-attack which is in the making."[12] Finally, a German line crosser stated a day later she had observed large amounts of artillery, pontoon bridges, small boats, and river crossing equipment scattered in the woods near Bitburg. Her descriptions of the soldiers indicated they were from SS units. More alarming, conversations she overheard revealed they had recently arrived from Italy.[13] Thus, enemy prisoners provided Allied interrogators many significant signals of the impending German offensive.

A second source suggesting a potential German attack came from Allied aerial reconnaissance. Despite poor weather, the

Wehrmacht seldom escaped the eyes of the Allies' air forces. According to one source, the 67th Tactical Reconnaissance Group, supporting FUSA, flew 242 "successful" reconnaissance missions in the month before 16 December.[14]

These missions showed a large German buildup west of the Rhine River, especially near the Ardennes region. Pilots reported trains with Tiger tanks, trucks, and artillery offloading near railroad lines running south towards the Ardennes. Hospital trains deploying forward, large convoys moving south, and increasing activity in railroad marshaling yards at Gemund, Gerolstein, and Bitburg—all in the Ardennes—provided further indications of an impending offensive. Later missions identified steady activity at the marshaling yards in Trier and Koblenz.[15]

These aerial photographs of German railroad yards provided interpreters with indicators of a powerful offensive capability. As Colonel Oscar W. Koch, Patton's G2, observed, "[s]o detailed were their findings that, had it been useful, they could have reproduced schedules of those portions of the German railroad system under their surveillance."[16]

Ultra intercepts of German radio messages provided the third source of information for Allied analysts. During December, signal specialists working at Bletchley Park recorded forty to fifty messages daily. Many messages contained illuminating insights into Hitler's hopes in the West.[17] Ralph Bennett, a high ranking Ultra analyst and later author, supports this view. "So far from conveying little intelligence," Bennett writes, "these signals had a great deal to say about German movements in and near the Ardennes during the weeks preceding 16 December."[18]

One such message intercepted 16 September disclosed the order creating Sixth SS Panzer Army, commanded by Sepp Dietrich. Later messages disclosed the exact organization of Dietrich's army, including subunits' locations, strengths, and timetables for refitting and rail movements. Most alarming was the large number of panzer and paratrooper units assigned to this army. Further messages described Dietrich's new army as a strategic reserve, implying the *Fuhrer* alone controlled it.[19]

This strategic reserve remained an enigma for Allied intelligence officers. By early December, Allied intelligence estimates noted at least thirteen German divisions out-of-line on the Western Front. Concerning these divisions, Ultra identified at least four SS panzer divisions and one army panzer division as part of the strategic reserve.[20] Despite evidence of this powerful armor concentration, Allied intelligence staffs misinterpreted the reserve's mission. It would prove a costly mistake.

Ultra furnished further signals of German offensive capabilities. In early December, analysts intercepted a series of messages detailing the creation of a new fighter command in the West, *Jagdfuhrer Mittelrhein*, (Officer Commanding Fighters, Central Rhineland). Later messages ordered Western Front fighter unit commanders to attend a meeting at Koblenz on 5 December.[21] Hurried follow-up messages demanded daily status reports on aircraft serviceability, locations, and pilot training. Answers to these demands generated detailed information on German aircraft strength and dispositions in the West.

Based on these messages, analysts discovered a powerful air

threat poised near the Ardennes. In fact, so powerful was this air concentration it was later described as "the largest [German redistribution] to take place since the invasion of Russia in 1941."[22] Unfortunately, like the armor reserve, Allied analysts and commanders misread German intentions.

Ultra yielded a startling array of signals which, combined with prisoner interrogations and aerial reconnaissance reports, should have indicated a German counteroffensive capability in the Ardennes. Yet, Allied intelligence staffs issued no warnings of the impending German attack. What, then, obfuscated their view of the armored sword unsheathed before them?

The Allies failure to consider "noise" greatly hindered efforts to ascertain German intentions. Usually externally generated, "noise" is also a function of internal analytical processes—including cultural bias, misperceptions, and faulty assumptions. The Allies' failure to discern these internal and external noises led to their surprise on 16 December.

German deception efforts provided one significant source of noise. An aggressive, innovative, and persuasive *Wehrmacht* deception plan clouded Allied assessments of German intentions. One author writes, "[t]he German deception plan was deliberately conceived with specific objectives, one of which was to gain surprise. The Germans provided a false picture for Allied viewing, and Allied intelligence reports reflected that picture."[23] Misleading operational code names such as *"Wacht am Rhein"* (Watch on the Rhine) and *"Alwehrschlacht im Westen"* (Defensive Battle in the West)—both deliberately picked by Hitler—distorted the Allied view of the Ardennes buildup.[24]

A second source of noise came from the "cry wolf" syndrome. Ironically, this intelligence idiosyncrasy surfaced several times during the Allied dash across France. Many American commanders viewed their intelligence chiefs as alarmists and pessimists. Colonel Benjamin "Monk" Dickson, FUSA G2, epitomized these tendencies. As Twelfth US Army Group commander General Omar Bradley relates in *A Soldier's Story*:

> Monk Dickson was as brilliant and skilled a G-2 as served in the American army. . . . But like most G-2's he was often a pessimist and an alarmist. Had I gone on guard every time Dickson, or any other G-2, called wolf, we would never have taken many of the riskier moves that hastened the end of the war.[25]

Dickson's alarmist tendencies originated after he "had been chased around by Rommel's tank elements in Tunisia."[26] Later in Europe, whenever the Russians lost contact with a German division, Dickson would automatically place the division in the Western European order of battle. Furthermore, in September 1944, Dickson awoke his commander, General Lieutenant General Courtney H. Hodges, reporting the *Wehrmacht* was disbanding the SS and that Field Marshall Gerd von Rundstedt was calling upon the German people to seek peace with the Western Allies. Unfortunately, much to Dickson's chagrin, his impetuous report originated from a covert American "black propaganda" broadcast targeted against German civilians. Dickson's final outburst occurred at a 14 December FUSA staff meeting. In front of the astonished officers, Dickson, referring to his observations of recent intelligence reports, abruptly slapped the operations map exclaiming "It's the Ardennes!"[27] Yet his warning fell on deaf ears: Dickson's cry wolf history tempered

the warning he now trumpeted.

A third source of "noise" came ironically from Ultra. Throughout the war Ultra played a spectacular role providing Allied commanders advance warning of German plans. Ultra's revelations helped secure victory at Alam Haifa and at Medenine in Africa. Later, in August 1944, Ultra provided invaluable information leading to the stunning victory at Falaise. In short, Allied intelligence chiefs depended on Ultra to provide ample warning of specific German intentions.[28]

However, in the months preceding the Battle of the Bulge, Ultra intercepts yielded neither the specific time nor the exact location for the German attack. Indeed, as Charles A. MacDonald maintains in *A Time For Trumpets: The Untold Story of the Battle of the Bulge*:

> Allied commanders had come to expect ULTRA to be specific, to tell them not only what but when and where. When neither ULTRA nor their other intelligence sources told them those things, they failed to penetrate Hitler's masterful deception scheme to parade the assembly of the Sixth Panzer Army in the north while preparing to secretly attack in the Ardennes.[29]

Ralph Bennett adds "Ultra intelligence was plentiful and informative, but it did not point conclusively towards an offensive in the Ardennes. . . . In so far as [Allied commanders] were not firmly warned of this possibility . . . the Ultra evidence was misread and misunderstood."[30] Thus, despite intercepting many signals of a German offensive, the lack of specific details added ambiguity to the interpretation of Ultra's warnings.

The final source of "noise" involved faulty analysis concerning the Sixth SS Panzer Army's purpose and who commanded it. Most

intelligence officers viewed this force as a reserve for counterattacking Allied penetrations into Germany. Dickson's Intelligence Estimate No. 37 echoed this view:

> It is plain that [von Rundstedt's] strategy in defense of the Reich is based on the exhaustion of our offense to be followed by an all-out counterattack with armor, between the ROER and ERFT, supported by every weapon he can bring to bear.[31]

Furthermore, Dickson added, this counterattack "is to be expected when our major ground forces have crossed the ROER river. . . . The restoration of the West Wall is still a probably strategic objective."[32]

Intelligence officers were not the only ones who disregarded more ambitious German objectives. For instance, Bradley agreed with subordinates in FUSA as to von Rundstedt's intentions In *A Soldier's Story*, Bradley states:

> In estimating von Rundstedt's capabilities, we reasoned that any counteroffensive must necessarily be directed against a limited objective where it could best blunt our threatening advance to the Rhine. Any more ambitious an effort, we estimated, would greatly exceed the enemy's resources.[33]

Lieutenant General Walter Bedell Smith, the Supreme Headquarters Allied Expeditionary Force chief of staff, agreed with Bradley's assessment. When asked about a last ditch German attack from the Ardennes, Smith succinctly replied "No Goddamned fool would do it."[34]

The second fatal Allied assumption was that von Rundstedt would command the counterattack. By linking him to German intentions, the Allies believed the campaign would be fought in a

rational and predictable manner. Unlike Hitler, von Rundstedt would adhere to standard principles of German military art. Again, Intelligence Estimate No. 37 states:

> It is apparent that *von Rundstedt, who obviously is conducting military operations without the benefit of intuition,* has skillfully defended and husbanded his forces and is preparing for his part in the all-out application of every weapon at the focal point and the correct time to achieve defense of the Reich west of the Rhine. . . .[35] [emphasis added]

However, as history proves, Hitler alone commanded. Looking through a lens undistorted by Allied optimism, Hitler sought a strategic objective to avoid defeat. Like past campaigns the *Fuhrerprinzip* dominated German military decisions. Allied intelligence officers—and their commanders—failed to appreciate these considerations and the desperation motivating Hitler. By dissociating Hitler from the indications of the Ardennes buildup, the seeds of Allied surprise were firmly planted.

The Allied inability to discern German intentions led to a costly setback. This failure occurred despite many indicators of a German counteroffensive capability. Subtle, albeit recognizable "noises" distorted Allied intelligence estimates. Unchecked by proper analysis, these noises generated a negative threat perception permeating Allied estimates of German intentions. Based on this analysis, the Allies succumbed to surprise.

The Yom Kippur War

At 1400 hours, 6 October 1973, Egyptian and Syrian armed forces launched massive artillery and air strikes against Israeli positions. Soon afterwards, four Arab armies along two fronts

began large-scale attacks into Israel. Unlike the 1967 Arab-Israeli war, Israel now found itself the victim of surprise.[36]

Despite many indicators of an impending Arab attack, the Israeli Defense Forces (IDF) succumbed to operational and strategic surprise. The architect and commander of the Arab attack, Egyptian Lieutenant General Saad el Shazly, later recalled the early effects of Israeli surprise. "The enemy forces were in chaos," writes Shazly. "effectively without armor in the tactical zone. . . . This morning, 18 hours after our assault, there was no sign that the enemy's reserves had yet joined the battle."[37] An Israeli armored division commander during the war shares a similar view:

> This was not the way I had imagined war breaking out. I had believed that our intelligence services would give us advanced warning, enabling us to deploy in time according to prepared plans. But that was not to be.[38]

The Arabs combined strict operational security procedures with an elaborate deception plan to achieve surprise. Despite these extraordinary measures, Israeli intelligence agencies received many indicators of the Arab attack. As one Israeli commander argues, "in spite of the Arab's efforts to mask their intentions, the IDF possessed enough information and had clear intelligence indicators to conclude that Egypt and Syria were in the final stages of war preparation."[39]

Israeli intelligence received the first indicators of an Arab attack in the last two weeks of September 1973. During this period Egypt conducted an annual military exercise like it had each year since 1968. While monitoring this exercise, both Israeli and American intelligence agencies discerned some striking anomalies

from past signatures. For instance, unlike former exercises, the Egyptian Army was now practicing division level maneuvers. Unprecedented logistic efforts supported the largest stockpiling of ammunition yet reported. Moreover, intercepted Egyptian radio communications revealed vastly improved field communications networks unwarranted for an exercise.[40]

Israel was not alone in collecting indicators of an Arab attack. The United States Central Intelligence Agency observed many of these same signals. As one source explains,

> as soon as the CIA learned this [information], Israel was warned. Specifically, Washington intelligence sources now claim, Israel was asked "at very high level" whether this was not an indication of Arab preparations for the assault expected—by some of the American intelligence community, at least—since the spring. Israel rejected the fears.[41]

Similar indicators occurred simultaneously on Israel's northern front with Syria. The front commander, Major General Yizhak Hofi, rendered warnings to the Israeli General Staff on 24 September. Hofi's report showed Syrian armored forces massing on the border at an unprecedented rate. Equally unprecedented were the surface-to-air missile (SAM) batteries deployed to protect these forces.[42]

Still more signals of an impending attack flowed to the General Staff towards the close of the "exercise." Israeli soldiers operating sophisticated sensors along the Bar-Lev line reported a flurry of activity across the border. One outpost five miles south of Port Fuad observed Egyptian troops unloading artillery, equipment, and ammunition at the port.[43] Further reports disclosed artillery moving forward and the reoccupation of former

SAM and surface-to-surface missile positions. Israeli order of battle specialists noted the addition of fifty-six Egyptian artillery batteries in forward areas along the Canal. This raised the total number of batteries to 194.[44]

Engineer activity along the Canal also continued at a rapid rate. On 1 October, Egyptian engineers began clearing lanes through minefields. Soldiers were even seen diving into the Suez Canal to explode underwater mines. Later reports "described improvement works on the various descents to the water, earth-moving activity, preparation of areas for crossing and for bridges and pontoons."[45] Finally, several outposts observed Soviet supplied pontoon bridges—along with additional precious bridging equipment—moving forward toward the Canal. Taken together, these tactical reports provided many indicators of an Arab attack.

Besides tactical indicators, several strategic indicators suggested similar warnings of a surprise attack. For instance, Israeli intelligence knew the Soviet's launched a reconnaissance satellite in early October. More important, the IDF knew the satellite's orbit passed daily over the Suez Canal, the Sinai, and the Syrian-Israeli border.[46] On 4 October, Israeli Naval intelligence reported the mass exodus of Soviet ships stationed in Alexandria and Port Said. "Reading all the various indicators, the senior intelligence officer of the Israeli Navy expressed the opinion to his commanding officer early in [October] that war was imminent. His appreciation was not accepted at [General Headquarters]."[47] Finally, again on 4 October, Israeli intelligence noticed giant Soviet An-22 *Cock* heavy transports arriving in Cairo and Damascus. Subsequent information indicated the planes were

evacuating Soviet civilians and advisor's families stationed there.[48]

Israel received many signals suggesting an Arab attack. So alarming was the situation that at a 5 October General Staff meeting "it was noted that the Egyptian Army along the Suez Canal had reached a degree of emergency deployment and dispositions such as had never been observed previously by the IDF."[49] Yet, Israeli intelligence—and high ranking military and governmental decision makers—viewed an attack as unlikely. At the same 5 October meeting, "the intelligence picture was again presented, but the probability of war breaking out was regarded as 'the lowest of the low.'"[50]

Israel's failure to foresee the Arab attack resulted from grossly underestimating Egyptian and Syrian capabilities. Several factors contributed to this misjudgment. To begin with, cultural biases and preconceptions prejudiced Israeli analysis. Elaborate Egyptian deception plans generated ambiguous signals (noise) which further confused intelligence analysis. Finally, Israel's reliance on military intelligence versus political intelligence prevented a proper view of Arab capabilities.

Israeli cultural biases and preconceptions produced the most serious barrier to gauging correctly Arab capabilities. The stunning 1967 victory over their Arab opponents reinforced Israel's overconfidence. Poor Arab training, leadership, and equipment—so Israeli leaders thought—precluded any immediate threats to Israel. As Georgetown University professor Anthony H. Cordesman contends, "Israel tended to treat Arab weaknesses as if they were cultural

and almost inevitable in the Arab approach to the art of war. . . ."[51]

Today, many Israeli leaders acknowledge this serious analytical failure. As one former Israeli commander writes, "surprise of the IDF was a result of our exaggerated overconfidence, which had been building up over a long period of time."[52] Former Egyptian War Minister Ahmed Ismail-Ali puts the problem more bluntly, describing Israel as "an enemy who suffers from the evils of wanton conceit."[53] In short, convinced of their own military and moral superiority, few Israelis took the mounting Arab capabilities seriously.

Cultural biases and preconceptions also permeated Israel's intelligence methodology. More clearly, their intelligence paradigm for analyzing Arab strategic intentions rested on two preconditions. First, Israel believed Syria would attack only in conjunction with Egypt. Second, Israeli leaders assumed Egypt would postpone a major war until the Egyptian air force could establish at least local air superiority. Referred to as the "concept," these preconditions presented a powerful barrier to gauging correctly Arab intentions. Moreover, linked to faulty analysis of Arab capabilities, the paradigm proved seriously shortsighted.[54]

Historian Michael I. Handel highlights the second precondition—the need for Arab air superiority—as a chief cause for Israeli surprise. In his book *Perception, Deception and Surprise: The Case of the Yom Kippur War*, Handel writes:

> Control of the skies became the cardinal rule of [Israeli] military thinking, a *sine qua non*. The Israelis found it difficult to conceive of an enemy initiating war unless he could secure air control or, at least, amass enough air power to support ground operations.[55]

Unfortunately, this precondition permeated Israel's analysis of Arab intentions. Israeli intelligence overlooked the Arab determination to offset its adversaries chief advantage—control of the skies. Dr. Stephan T. Possony's introductory comments to Erfurth's classic work on surprise explains how considering the impossible is an important part of intelligence work. Possony writes:

> The idea that something 'cannot be done' is one of the main aids to successful surprise. It frequently happens that military experts consider particular operations as not feasible. Logistical difficulties, roughness of terrain, military traditions—all these elements are often over-emphasized. Experts tend to forget that most military problems are soluble provided one is willing to pay they price.[56]

Besides distorting their view of Arab *strategic* capabilities, cultural biases also interfered with assessing Arab *tactical* capabilities. To begin with, Israeli intelligence considerably underrated their adversaries ability to operate equipment newly acquired from the Soviet Union. Additionally, although the equipment's nomenclature was generally known to Israeli intelligence, the quantity and quality escaped sound evaluation. This led to technical surprise.[57]

Israeli intelligence closely monitored the massive equipment shipments flowing from the Soviet Union to Egypt. These shipments included AT-3 "suitcase" Sagger anti-tank missiles, pontoon bridges, MIG fighters, SAM-6s, and counter-electronic measures equipment. At the same time "the Israelis underestimated the capacity of Arab armies to integrate those weapons into their armed forces and to learn their efficient operation."[58] Egypt's successful bridging operations on 6 October proves the point.

The Israelis long viewed the Suez Canal as an impregnable barrier to Arab attack. The Israeli government invested millions of dollars constructing the Bar-Lev line to further strengthen the Canal's natural defenses. Egypt was equally impressed with their enemy's defensive arrangements. To nullify Israeli advantages, Egypt procured the means to physically overcome the Canal. These included pontoon bridges, other bridging equipment, and commercial water cannons. More important, the Egyptian Army initiated intensive training programs to improve their water crossing abilities. In fact, as Egyptian Lieutenant General Shazly states, "in just over two years we succeeded in creating and training almost 40 engineer battalions, some of them highly specialized. It was our biggest coup and the foundation of our success."[59]

Israeli intelligence significantly misjudged Egypt's ability to quickly breach the Canal. The inaccurate analysis started at the highest government levels and permeated all subsequent military assessments. "I had a theory that it would take them all night to set up the bridges, [Israeli Defense Minister Moshe] Dayan said, and that we would be able to prevent this with our armor."[60] However, as one author observed,

> Dayan's thinking was outdated. Newly developed Russian bridging equipment and an Egyptian engineer's innovative adaptation of a commercial device for breaching ramparts made the defense minister's view a dangerous illusion.[61]

What the Israelis thought would take at least twenty-four hours occurred in less than half that time. By 2230 hours on 6 October—only eight hours after the initial assault—the Egyptian engineers accomplished remarkable feats. After blasting away sixty

breaches in the sand ramparts, the engineers quickly opened eight heavy-duty bridges, four light bridges, and thirty-one ferries. Based on these achievements, "the Egyptians managed to throw eleven brigades over the canal on the night of 6-7 October, and put across well over 40,000 troops (five infantry divisions)."[62] In short, Israeli intelligence considerably underrated the Egyptians' ability to operate new equipment. This led to a negative threat perception concerning overall Egyptian military capabilities.

The second Israeli failure to comprehend Arab tactical capabilities resulted from misjudging the quality and quantity of Arab equipment. Sagger AT-4 anti-tank weapons and sophisticated infrared night fighting equipment provided the first clues to overlooked capabilities. Much to Israel's chagrin, both appeared in large quantities at the war's onset. The most stunning surprise sprang from the SAM-6. While knowing Egypt and Syria possessed the new air defense system, Israeli intelligence knew little about the missile's performance.[63]

The Yom Kippur War provided the SAM-6's first test in combat. Its employment thwarted early Israeli Air Force (IAF) strikes against Arab armor. On the war's first day, the IAF lost thirty Skyhawk fighter-bombers and ten Phantom jets, all to SAM-6 or ZSU 23-4 anti-aircraft gun fire. After action studies show Israeli aircraft suffered slightly less than ten percent losses from the SAM-6.[64] However, statistics fail to convey the SAM's effects on Israeli pilots. SAM-6s sharply degraded IAF close air support despite frequently missing Israeli aircraft. Previously effective air-to-ground tactics soon became obsolete as pilots performed evasive actions to survive.[65]

Moreover, threatened by the new missiles, SAM-suppression missions now emerged as the IAF's first priority. Unlike previous wars, the Arab air defense belt—bolstered by the SAM-6—jeopardized the IDF's crucial support to ground forces. Only the adoption of new tactics combined with heroic actions by Israeli pilots prevented further setbacks.[66]

Quality weapons deployed in mass provided the Arabs decisive technical surprise over their adversaries. Here, Egypt and Syria vindicated General Waldemar Erfurth's earlier finding concerning the surprise value of new weapons:

> The art of waiting and using new weapons at the right moment is particularly difficult. A new weapon must be put in use suddenly and in great quantities, nay, in maximum quantities. Otherwise, the surprise of the opponent is never complete nor decisive.[67]

The Israeli failure to correctly judge Arab tactical capabilities led to faulty analysis of Arab intentions. Viewing Arab intentions through a lens distorted by misjudged capabilities, few Israeli leaders thought the Arabs would—or could—attack.

Besides misjudging Arab capabilities, Egyptian deception further confused Israeli analysis. The deception plan incorporated military and political stratagems. Thus, their targets included both military and political decision makers.

The deception plan's major means centered on a series of annual autumn military exercises beginning in 1968 and culminating in October 1973. Each year the Egyptian Armed Forces conducted increasingly larger "strategic exercises." Their goals were threefold. To begin with, the exercises provided an excellent

opportunity to evaluate Israeli countermeasures. Next, Egypt sought to erode Israel's popular support by forcing them into precautionary measures. (Mobilizing reservists was exceedingly expensive and significantly disrupted Israel's fragile economy). Finally, Egypt hoped to numb Israeli alertness to an Arab attack. Routinely mobilizing reserves aided this endeavor. In fact, the Egyptians mobilized reservists twenty-two times in 1973 alone.[68]

Political deception also played an important role in the Egyptian plan. For example, Egyptian Foreign Minister Mohammed Zayat traveled to the United States in late September 1973, to meet with Secretary of State Henry Kissinger. During the meeting, Zayat overtly sought "to reactivate Washington's role as mediator in the conflict and 'give peace another chance.'"[69] He also explained Egypt's ongoing military exercise as simply precautionary measures against a possible Israeli attack. Kissinger relayed Zayat's views to Israeli Foreign Minister Abba Eden at a later meeting on 4 October.[70] These views apparently corroborated earlier Israeli intelligence findings concerning the nature of the Egyptian exercises.

The final factor contributing to Israel's failure to predict an Arab attack resulted from overemphasizing purely military intelligence. Israel relied on three primary producers for foreign intelligence. These included the IDF's military intelligence directorate, the Foreign Ministry research department, and the Mossad or Secret Intelligence Service. However, only the military intelligence directorate collectively evaluated the findings of each service.

Years of bureaucratic battles between competing intelligence

agencies weakened alternative views of Arab capabilities and intentions. In fact, as one former head of Israeli intelligence observes,

> the Military Intelligence Branch had grown over the years both in size and in scope, thwarting any attempt by the small research unit at the Foreign Affairs office and by the Mossad, . . . to expand or prepare an independent evaluation.[71]

Severe cutbacks in the Foreign Ministry staff by Premier Golda Meir further limited political evaluations. These developments led to a "monolithic interpretation of information" devoid of political considerations.[72]

In summary, Israeli intelligence gathered many indictors of an Arab attack. Combined multi-source intelligence from both Israeli and US agencies should have warned decisionmakers that an attack was imminent. Yet, incomplete political assessments, overshadowed by misjudged military evaluations exacerbated by deception and external noises, resulted in Israeli operational and strategic surprise on 6 October.

The above historical studies provide a useful setting for evaluating contemporary intelligence support to operational commanders. Today's technology offers contemporary commanders considerably more collection capabilities than was available previously in 1944 and 1973.

IV. Intelligence Support to Operational Commanders

Operational commanders receive intelligence support from many national, joint, and combined organizations. Today, operations in

a theater of war are multiservice in character. Moreover, modern conflict invariably involves combined—or coalition—warfare. During Operation Desert Storm, for example, US Central Command (CENTCOM) received intelligence support from many sources.

Coordinating this intelligence support between national, joint, and combined organizations offers many challenges. Unique service requirements, language barriers, interoperability problems, and the need to protect sensitive national collection means often interrupts the intelligence flow. Yet, to ensure synergism, operational commanders demand fully fused and integrated intelligence production and analysis. Towards this end, the Secretary of Defense recently directed the creation of Joint Intelligence Centers, or JICs.[73]

Discussing each national, joint, or combined intelligence organization's contribution to the JIC transcends the scope and classification of this monograph. Thus, I will focus on the US Army Echelons Above Corps (EAC) intelligence and electronic warfare (IEW) organizations that support operational commanders. The Military Intelligence (MI) brigade, (Echelons Above Corps) (EAC) normally provides this support.

Seven MI brigades (EAC) furnish the Army IEW organizations at theater level. The US Army Intelligence and Security Command (INSCOM) provides one MI brigade (EAC) to each of the five regional unified commanders. The brigades remain under INSCOM command during peacetime; they revert to theater command during conflict. Of the remaining two brigades, one supports contingency operations while the last provides general support to INSCOM.[74]

INSCOM tailors MI brigades (EAC) both regionally and functionally to meet the IEW missions of supported commanders. "This provides the appropriate mix of organizations, IEW equipment, linguists, area expertise, and data bases to meet the theater commander's requirements."[75] Tailoring also helps the commander interact with joint and combined military forces or host nations.

The brigade's mission "is to provide IEW support to battle management at joint and Allied command levels; to theater rear operations; and to the sustaining base."[76] To accomplish these missions, INSCOM recently began to transition its MI brigades to "L" series table of organization and equipment.[77] Appendix 1 illustrates this generic type MI brigade (EAC) organization. The brigade also serves as a command and control headquarters for attached and subordinate elements. Finally, to fully coordinate theater intelligence, the MI brigade (EAC) establishes the Echelons Above Corps Intelligence Center (EACIC) discussed below.

The brigade's operations battalion contributes the "brains" of Army operational level intelligence analysis and production. The battalion includes—among other organizations—the EACIC. The EACIC "controls, manages, tasks, processes, analyzes, and disseminates intelligence" to commanders within the theater of operation.[78] EACIC's also interface with theater and national assets, joint intelligence organizations, and intelligence commands from allied headquarters. A full listing of EACIC interfaces appears at Appendix 2.

Two sections within the EACIC coordinate intelligence support to theater Army commanders. The collection management and dissemination (CM and D) section orchestrates and tasks theater

army intelligence assets. The CM & D section's primary function is to use all collection resources available to satisfy the theater Army commander's priority intelligence requirements (PIR) and information requirements (IR).[79]

The All Source Production Section (ASPS)—along with the J2—provides the bulk of intelligence analysis and assessments to operational commanders. The ASPS synthesizes information from multi-source, multi-discipline sensors into intelligence for the operational commander. Most significantly, this section determines "what enemy information is available to help identify specific indicators of enemy intent."[80]

In sum, MI brigade (EAC) and its accompanying EACIC play pivotal roles in answering the operational commander's intelligence requirements. Together with the theater J2, MI brigades (EAC) provide operational commanders with analysis of enemy capabilities and intentions. The brigades "are a major source of intelligence on enemy ground forces."[81] Just as important, EACICs orchestrate and task the vast sensor array available to support theater operations. As such, they play a critical role in avoiding operational surprise.

The EACICs link commanders with unprecedented—and continuously improving—collection systems. These systems include both national and organic assets. Security considerations prohibit detailed discussions of most national system capabilities. Thus, the discussion below highlights some off the most important collection systems available to operational commanders.

National agencies, including the Central Intelligence Agency,

National Security Agency, and Defense Intelligence Agency, provide operational commanders significant intelligence support. This support flows from the Tactical Exploitation of National Capabilities (TENCAP) program. TENCAP translates tactical and operational commanders' intelligence requirements into tasking to national level agencies. For instance, national overhead surveillance sensors can supply imagery intelligence (IMINT) in near-real-time to operational commanders. "So sensitive are these sensors that, using computer enhancement, U. S. [intelligence] agencies can differentiate between 120 shades of gray and instantly spot any changes from previous images."[82]

Space-borne sensors transmit signals to ground stations colocated with EACICs.[83] Here, the lightweight, truck-mounted Tactical High Mobility Terminals, or THMT, provide the link to space systems. Other systems such as the Army Space Program Office-Secondary Imagery Dissemination System (ASPO-SIDS) distributes digital imagery intelligence theater-wide.[84]

Besides IMINT, national agencies also play an important role providing signals intelligence (SIGINT). The TROJAN System, for example, provides commanders with digital and secure voice satellite communications for SIGINT. By 1993,

> remote TROJAN equipment reallocated from deactivated European collection facilities will be installed at national sensor connectivity nodes and in transportable configuration to maintain target access, provide wider areas/deeper look surveillance capabilities, and further support worldwide contingency operations.[85]

Further, the Electronic Processing Dissemination System (EPDS) supported by the Electronic Tactical Users Terminal (ETUT) now

provide commanders with sophisticated SIGINT collection and analysis. Together, TROJAN, EPDS, and ETUT link commanders with real time national emitter locator (SIGINT) systems. This connectivity furnishes an important source of national-level SIGINT previously unavailable to operational commanders. More important, these systems facilitate rapid situation development and targeting.[86]

The recent Gulf War witnessed the first war fought with direct support from these space systems. Other recently fielded systems supplemented intelligence collection and warning from national overhead platforms. One such system was the Joint Surveillance Target Attack Radar System (JSTARS).

Like the space systems described above, the E-8A JSTARS made its wartime debut during Desert Storm. Two prototype E-8s deployed from Europe to Saudi Arabia during the war received much praise from commanders. As Air Force Chief of Staff General Merrill A. McPeak maintains, "Joint-STARS is a huge success. . . . I don't think the United States will ever want to go to a combat situation again without a Joint-STARS-like system."[87]

Essentially a militarized Boeing 707, JSTARS combines multimode phased array radar with advanced airborne command and control capabilities. One radar mode uses wide area surveillance radar capable of scanning a 150 by 180 kilometer area. Computers differentiate between wheeled and tracked vehicle moving target indicators to within 100-meter accuracy.[88] Besides finding fixed and moving ground targets, the radar also detects helicopters and slow flying aircraft. The ability to "paint" (or scan) areas every sixty seconds allows JSTARS to continuously track moving or

stationary targets.[89]

JSTARS' operators can also simultaneously switch to a high resolution synthetic aperture radar (SAR) mode. This provides eighteen on-board console operators a map image of the ground. Radar returns appear on color consoles overlayed with made-made and topographical map features. Thus, SAR offers airborne operators with detailed tactical imagery and situational awareness.[90]

Commanders receive instant intelligence reports from JSTARS through ground station modules (GSMs). GSMs normally colocate with EACICs and tactical command posts. Advanced communications packages ensure secure data links between JSTARS and the GSMs. Two workstations in shelters mounted on a five-ton truck allow operators to view imagery reports simultaneously with airborne operators.[91] New workstations currently in full scale development will soon "be able to receive data from multiple sensors systems simultaneously."[92] For example, advanced technology could soon link these workstations with the Beechcraft RC-12H/K Guardrail Common Sensor (GRCS). Referred to as "Guardlock," this aircraft combines communications intercept and direction finding functions with the ability to locate non-communications emitters such as radar.

Besides technical means, Special Operations Forces (SOF) add an important human dimension to operational level intelligence collection. Normally tasked by the CINC's subunified Special Operations Command (SOC), SOF special reconnaissance (SR) teams complement "other national and theater collection systems . . . that are more vulnerable to weather, terrain masking, and enemy countermeasures."[93]

Special Forces (SF) teams can conduct SR missions throughout the theater of operations. Infiltrating by land, sea, or air, SF teams often deploy to critical named areas of interest (NAIs). Here the regionally oriented teams collect and report information corresponding to the commanders PIR. Hand-held laser range finders, as well as night observation and thermal imagery devices, enhance surveillance capabilities. Satellite communication radios relay reports instantly to decisiomakers.

In short, the sensors described above, complemented by SOF, offer operational commanders time-critical multisource intelligence data. Together they provide "both a 'trip-wire' warning of imminent enemy attacks, as well as a profusion of other intelligence, both before and after an attack begins."[94]

V. Analysis of Operational Commander's Susceptibly To Surprise

Operational commanders have many advanced technological means to gather intelligence. This technology continues to expand at an phenomenal pace. Funding for future systems remains an important Department of Defense budget priority. When recently asked about budget cuts concerning intelligence collection systems, Defense Secretary Dick Cheney replied "Let's just say [Director of Central Intelligence (DCI)] Bob Gates is a happy man."[95] Spending for intelligence systems in the Army alone will increase from $450 million to between $700 to $900 million over the next five years.[96]

Despite these enormous technological advances, operational level intelligence collection and analysis still suffer several shortcomings. First, even advanced technology has limitations.

Poor weather and masking terrain can still obscure even the most advanced national sensors. Moreover, today's sensors depend heavily on computers. This makes sensors susceptible to computer viruses. For example, in November 1988, a "bored graduate student" accessed the Defense Advanced Research Projects Agency (DARPA) computer network. The student installed a virus which quickly infected more than 60,000 computers—each handling classified data. The virus caused system crashes throughout the country.[97] Today, even third world nations can attack computer-controlled intelligence sensors with simple viruses.

A second shortcoming centers on noise. External noise in the form of deception—albeit increasingly difficult—is still possible. During the recent Gulf War, Iraq used simple tricks to foil sophisticated U. S. surveillance systems.[98] Feints, decoys, and deception operations perfected during the eight year war against Iran complicated Allied intelligence efforts.[99] Iraq's successful deception deserves more careful study in the wake of lessons learned from the war. Moreover, the Soviet's penchant for *Maskirovka*, doctrinally exported to her former clients, remains a powerful planning principle for many potential U. S. adversaries. *Maskirovka*—combining deception, disinformation, security, and camouflage—can complicate and confuse the intelligence picture compiled by even advanced sensors.[100] As such, "[a]nalysts are . . . generally gloomy about the prospects of avoiding surprise at the outset of the next war."[101]

Internal noises generated by biases, preconceptions, and predilections offer a more serious problem. American commanders

and staffs often analyze enemy intentions through a lens distorted by western biases. For example,

> how a [North Atlantic Treaty Organization (NATO)] officer and a Soviet officer interpret the term "road" *shows an interesting cultural, or environmental, bias.* What to a NATO officer is a dirt track . . . is, to a Russian, almost as much a "road" as is an autobahn, and therefore just as much a candidate for a regimental main axis or rear supply route.[emphasis added][102]

Perhaps the greatest bias confronting contemporary campaign planners is the notion of near perfect intelligence. As some authors argue, US technology provides a "suite of sensors" that see through deception to reveal a "fatal visibility" across the battlefield.[103] This bias overlooks the potential for enemy deception directed at advanced sensors. Moreover, "simply having a great deal of information about the enemy does not guarantee success."[104] It is the analysis of information which provides the answers to enemy actions. Thus, the tremendous US advantage in collection technology, seemingly epitomized during the recent Gulf War, can lead commanders and political leaders to disregard enemy military capabilities and intentions. Paradoxically, "an 'imperfect' intelligence system is safest, since by its description, decision-makers are wary of information distributed to them."[105]

Finally, fog and friction remain a constant factor on the modern battlefield. Danger, uncertainty, exertion, and chance—all characterized by Clausewitz as the true climate of war—combine to distort the commander's view.[106] Even with sophisticated space age sensors, "information that flows in a system under stress is only an approximation of reality."[107] Given the confusion and uncertainty of battle, analysts may overlook information vitally

important to the commander.

Ironically, too much data often thickens the fog of war. Increases in information can delay or disrupt analysis and decison-making. One Israeli expert on surprise argues:

> The more information that is collected, the more difficult it becomes to filter, organize, and integrate it into an estimate. There are limits on analysts' abilities to process information and to aggregate estimates from multiple indicators.[108]

The enemy may also seek to overload an adversaries collection efforts. As Richard K. Betts, a leading American authority on surprise explains, "an attacker might purposely increase the number of signals, by spewing out large amounts of disinformation to overload the victim's intelligence and decision systems, creating confusion and encouraging delay in response."[109] Moreover, information overload can clog command and control making commanders hesitant to act in ambiguous situations.[110] Instead of resolute and bold action, commanders may spend precious time evaluating each signal. Unfortunately, as one officer recently quipped, "the nuggets are usually there but we can't see through all the information."[111]

VI. Conclusions and Implications.

Despite advanced intelligence collection systems, operational commanders are still susceptible to surprise. Deception, noise, and friction limit the effectiveness of advanced intelligence collection systems. Together, these forces act as a cloud which often obscures a true view of enemy actions. While scientific

revolutions in intelligence collection capabilities help reduce vulnerability to surprise, analysis of enemy capabilities and intentions remains an art seldom perfected. Indeed, as one author suggests, "for the truly vexing questions in intelligence, high technology is vitally needed, but very often has no answers."[112]

Today's advanced sensors provide operational commanders with unprecedented data for analysis. Through analysis, staffs deduce estimates of enemy courses of action. Yet, the commander's view of predicted enemy actions emerges only after information passes through three prisms. The first prism disperses indicators of enemy capabilities and intentions. Security measures combined with simple deception can blind commanders to the enemy's real intentions. Next, information flows through the prism of fog and friction. Solid signals of enemy intentions and capabilities merge with ambiguous and often unexplained indicators. Finally, faulty analysis, sometimes swayed by biases or preconceptions, further refracts the commander's glance at reality. In short, improvements in technology, while important, can never completely overcome the effects of deception, noise, fog and friction, and faulty analysis. Historian Michael I. Handel supports this view concluding, "there is little chance, despite the availability of adequate information, ultra-sophisticated technologies, and all human effort invested, to prevent or forestall an impending surprise attack."[113]

The 1944 German Ardennes offensive and the Yom Kippur War both showed that noise and faulty analysis--not a lack of detailed intelligence—helped produce surprise. Despite many indications of impending attacks, Allied and Israeli intelligence chiefs—and decisionmakers—failed to discern the true intentions of their

enemies. Most importantly, biases and preconceptions—still prevalent today—prevented an accurate appraisal of operational level capabilities and intentions.

Over-reliance on modern surveillance technology to avoid surprise has several implications for operational commanders. Improved intelligence collection capabilities may make commanders more susceptible to surprise. Given our tremendous technological advantages, commanders may less frequently question the reliability of received information. Moreover, while technology plays an important role in collection, overemphasizing collection at the expense of analysis leaves commanders vulnerable to deception.

VII. Recommendations.

Modern collection systems provide operational commanders with many means to gather intelligence. Despite these advanced systems, commanders should consider enemy surprise as a possible course of action. Several recommendations to help reduce the potential for operational surprise are offered below.

To begin with, current intelligence field manuals should reemphasize skillful *analysis* of enemy capabilities and intentions. This involves more than just simple "bean counting" or regurgitating uninterpreted facts to decisionmakers. Skillful analysis includes *synthesizing* information into relevant and meaningful predictions of enemy intentions. While synthesizing information, analysts must "mentally wargame advantages and disadvantages of identified enemy capabilities from the enemy commander's point of view."[114] Most importantly, synthesis requires careful reflection

of collected information to identify trends and explain their meaning to decisionmakers.[115]

Synthesizing information into intelligence for commanders involves carefully focusing collection systems. The commander's Priority Intelligence Requirements (PIR) provide the basis for intelligence collection. When answering the operational level commander's PIR, analysts should consider the following questions:

* What are the enemy's high signature items?
* How can he hide, reduce, or eliminate signals from these items?
* How can the enemy fool friendly sensors?
* What signals can the enemy send to portray the false?
* How has the enemy conducted surprise attacks in the past?

These questions can help analysts develop a framework for examining the potential for enemy surprise.[116]

Next, operational level commanders require political intelligence to supplement military analysis. Political advisors assigned to each CINC currently provide this input. Yet, operational level commanders should consider priority political intelligence requirements as well as military PIR. Clearly stating these requirements through liaison with Department of State Bureau of Intelligence and Research (INR) and other national agencies should occur early during staff planning. Additionally, during peacetime, joint training exercises should habitually include inter-agency participation to strengthen the bonds between operational commanders and national agencies.

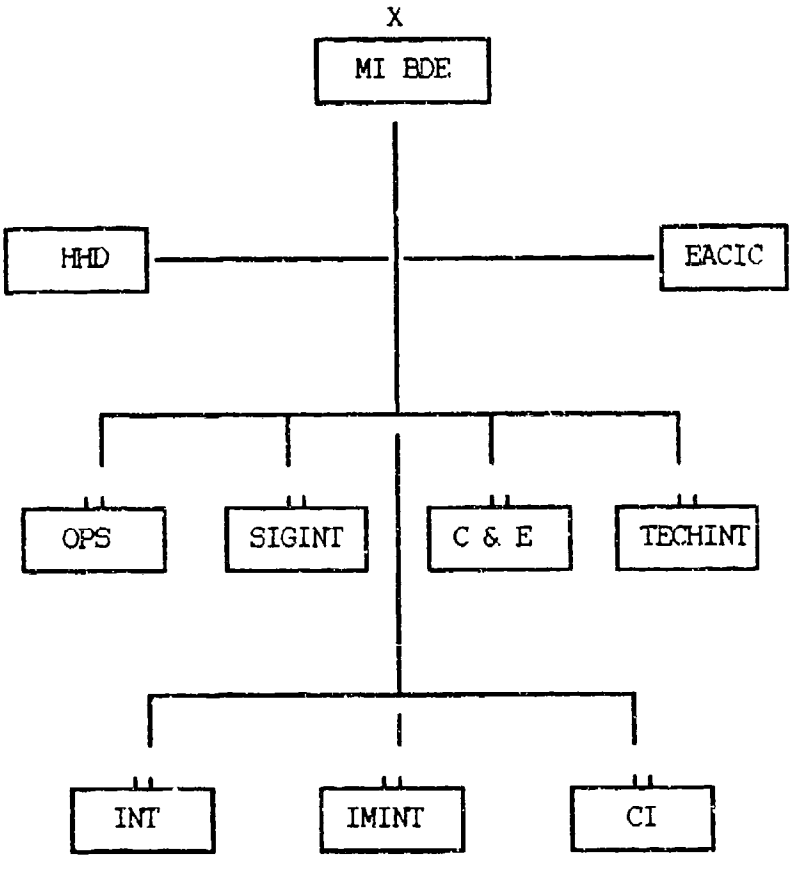
Another recommendation centers on the use of peacetime exercises and simulations conducted under conditions of surprise. Here, the Battlefield Commander's Training Program (BCTP)—

especially when training Corps level staffs—should inject worse case scenarios not anticipated during the staff planning process. Similar training needs to happen during Army level exercises or war games. During these exercises, leaders must emphasize avoiding the "school solution" or a single predictable option.

Finally, while wargaming friendly courses of action, commanders and staffs should develop contingency plans or branches for worse case enemy scenarios. Even if time limits detailed contingency plans, staff officers should in advance mentally wargame worse case scenarios and their effects on friendly courses of actions.

Surprise at the operational level of war remains a constant threat to U. S. military forces. Campaign planners—and their commanders--must acknowledge and understand this threat. Failing to recognize the possibility of surprise puts precious U. S. recources, most importantly our soldiers, in a potentially precarious position. Moreover, during a period of reduced forces and defense budget cut backs, avoiding surprise becomes even more important. In short, the realities of modern warfare dictate an even closer examination of the causes of surprise. The anlaysis and recommendations cited above offer one attempt to reduce the liklihood of operational level surprise.

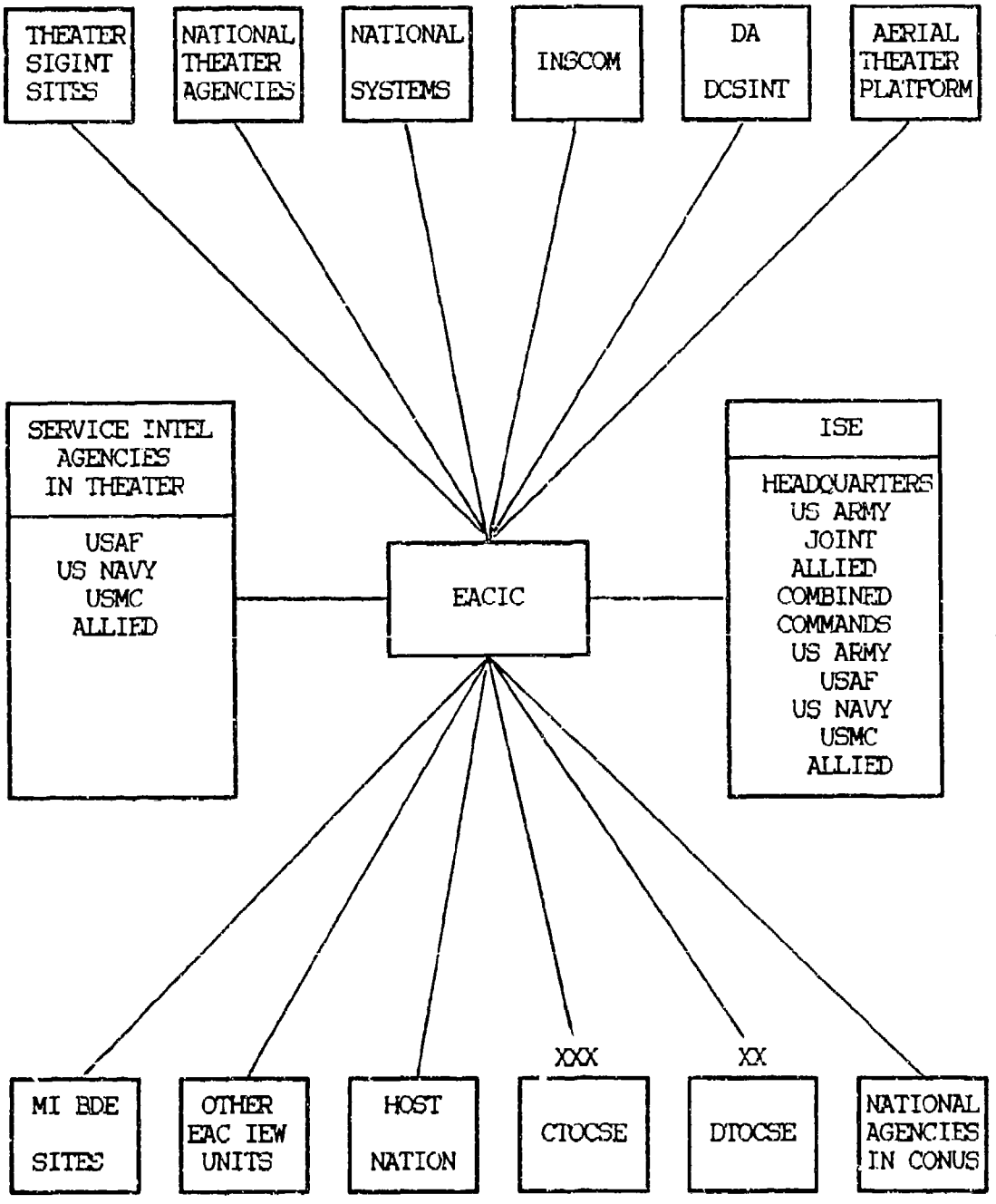
Appendix 1: Type Military Intelligence Brigade (EAC) Organization



LEGEND

HHD: Headquarters and Headquarters Detachment
EACIC: Echelons above Corps Intelligence Center
OPS: Operations Battalion
SIGINT: Signals Intelligence Battalion
C & E: Collection and Exploitation Battalion
TECHINT: Technical Intelligence Battalion
INT: Interrogation and Exploitation Battalion
IMINT: Imagery Analysis Battalion
CI: Counterintelligence Battalion

Appendix 2: Echelons Above Corps Intelligence Center Interfaces



Legend

SIGINT: Signals intelligence
INSCOM: US Army Intelligence and Security Command
CTOCSE: Corps Tactical Operations Center Support Element
DTOCSE: Division Tactical Operations Support Element
ISE: Intelligence Support Element
DCSINT: US Army Deputy Chief of Staff for Intelligence

ENDNOTES

[1] Ephraim Kam, *Surprise Attack: The Victim's Perspective* (Cambridge, MA: Harvard University Press, 1988), p. 1. For example, Kam indicates the British were taken unawares by the German invasion of Norway and the Japanese attack on Singapore; the French by the May 1940 German attack through the Ardennes; the Russians by Germany's 1941 Operation "Barbarossa;" the Americans by the Japanese surprise attack on Pearl Harbor; and finally the Germans during Operation "Overlord," the 1944 Allied invasion of Normandy.

[2] David B. Guralnik, Ed., *Webster's New World Dictionary of the American Language* (Clevland, OH: William Collins and World Publishing, 1976), p. 1433.

[3] U. S. Army Field Manual (FM) 100-5, *Operations* (Washington, D.C.: Government Printing Office, 5 May 1986), p. 95.

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[6] Timothy M. Laur, "Principles of Warning Intelligence," in Gerald W. Hopple and Bruce W. Watson, Eds., *The Military Intelligence Community* (Boulder, Co.: Westview Press, 1986), p. 149; and Alex R. Hybel, *The Logic of Surprise in International Conflict* (Lexington, MA: Lexington Books, 1986), pp. 13-15; the concept of "noise" is derived from Roberta Wohlstetter "Cuba and Pearl Harbor: Hindsight and Foresight," *Foreign Affairs* 43 (July 1965): 691.

[7] Richard K. Betts, *Surprise Attack: Lessons for Defense Planning* (Washington, D.C.: The Brooking Institute, 1982), p. 119.

[8] Charles A. MacDonald, *A Time For Trumpets: The Untold Story of the Battle of the Bulge* (New York: William Morrow and Company, 1985), pp. 55-57.

[9] National Archives, RG 407, WWII Operations Reports, FUSA, "Intelligence Estimate No. 37," 10 December 1944.

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[12] Oscar W. Koch, *G-2: Intelligence For Patton* (Philadelphia, PA.: Whitmore Publishing Company, 1971), p. 89.

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[16] Koch, *G-2: Intelligence For Patton*, p. 89.

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[20] MacDonald, *A Time For Trumpets*, p. 68; Bennett, *Ultra in the West*, p. 192.

[21] Bennett, *Ultra in the West*, p. 198.

[22] Hinsley, *Intelligence in the Second World War*, p. 427.

[23] Basil J. Hobar, "The Ardennes 1944: Intelligence Failure or Deception Success?" *Military Intelligence* 10 (1984): 16.

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[29] *Ibid.*

[30] Bennett, *Ultra in the West*, p. 204.

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[44] *Ibid.*, p. 47.

[45] *Ibid.*, p. 45

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[47] *Ibid.*, p. 47.

[48] *Ibid.*, p. 48.

[49] *Ibid.*, p. 47.

[50] *Ibid.*, p. 51.

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