REPORT

AD-A284 506

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	05/05/94	MONOGRAPH

4. TITLE AND SUBTITLE
THIRTEENTH CENTURY MONGOL WARFARE: CLASSICAL MILITARY STRATEGY OR OPERATIONAL ART?

5. FUNDING NUMBERS

6. AUTHOR(S)
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7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
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COMM (913) 684-3437 DSN 552-3437

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; Distribution Unlimited

12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 words)
See attached abstract

20030305166

14. SUBJECT TERMS
Operational Art
Mongol warfare
History of operational Art
Airland Battle

15. NUMBER OF PAGES
53

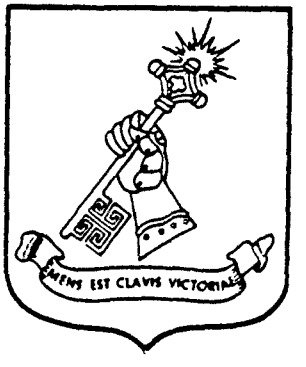
16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRA
Unclassified	Unclassified	Unclassified	Unlimited

Thirteenth Century Mongol Warfare: Classical Military Strategy or Operational Art?

A Monograph
by

Major Dana J. H. Pittard
Armor



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Fort Leavenworth, Kansas

Second Term AY 93-94

SCHOOL OF ADVANCED MILITARY STUDIES

MONOGRAPH APPROVAL

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Title of Monograph: 13th Century Mongol Warfare: Classical Military Strategy of Operational Art?

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Accepted this 6th day of May 1994

ABSTRACT

THIRTEENTH CENTURY MONGOL WARFARE: CLASSICAL MILITARY STRATEGY OR OPERATIONAL ART? by MAJ Dana J. H. Pittard, USA, 53 pages.

This study shows that thirteenth century Mongol warfare is an example of emerging operational art. There is significant debate on the origins of operational art. The School of Advanced Military Studies (SAMS) advances two arguments. Both arguments purport that operational art has Euro-American origins.

The thirteenth century Mongol Army was a well organized, brilliantly led and masterly controlled organization that achieved astounding military feats. The Mongols identified military strategic goals, established military conditions to achieve those goals, conducted sequential and simultaneous operations, and allocated operational resources. The Mongols also conducted campaigns with commanders that consistently displayed broad operational vision.

The study defines classical military strategy, then looks at the definition and origin of operational art. The study next examines two thirteenth century Mongol campaigns: the Khwarezmian Campaign (1219-1223) and the Central European Campaign (1241). The study analyzes the two campaigns using the definition of operational art found in Field Manual 100-5, Operations as criteria.

The study concludes that the thirteenth century Mongols practiced a form of operational art. Implications on the study of the historical practice of operational art are discussed.

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I. INTRODUCTION

There is significant debate on the origins of operational art. The U.S. Army's School of Advanced Military Studies (SAMS) advances two arguments. The first purports that operational art emerged with the industrial revolution. Union General Ulysses S. Grant's 1864-65 campaign during the American Civil War is the first example of operational art according to this argument. The second contends that operational art began during the Napoleonic Era. Napoleon's Wagram campaign (1809) is the first example of operational art according to this argument. Both arguments classify most warfare before the emergence of operational art (Grant in 1864 and Napoleon in 1809) as classical military strategy. However, there is a chance that operational art emerged before Napoleon.

The thirteenth century campaigns of Genghis Khan and his Mongol successors do not conveniently fit into the classical military strategy category. The Mongols identified military strategic goals, established military conditions to achieve those goals, conducted sequential and simultaneous operations, and allocated operational resources. The Mongols conducted campaigns with commanders who consistently displayed broad operational vision. The thirteenth century Mongol Army was a well organized, brilliantly led and masterly controlled organization that achieved astounding military feats during the thirteenth century. This study shows that thirteenth century Mongol warfare was not classical military strategy, but emerging operational art.

The evidence includes a brief look at classical military strategy and the definition and origin of operational art. The study analyzes two thirteenth century Mongol campaigns using the definition of operational art found in the U.S. Army's Field Manual (FM) 100-5 Operations as criteria. Based on the analysis the study makes recommendations for the study of the historical practice of operational art.

II. CLASSICAL MILITARY STRATEGY

This study defines classical strategy as the "strategy of a single point."[1] For centuries, armies had maneuvered in single dense masses. Densely packed opposing masses, with little or no linear extension or depth, characterize classical military strategy. The actual battlefield area was small. When opposing forces collided in battle, the battlefield resembled a mere point relative to the area encompassed by the theater of operations.[2] Battles such as Lutzen (1632), Agincourt (1415), and Blenheim (1704) are examples of this.

Compressed forces, in both time and space, on a small concentrated battlefield helped to make sure that the outcome of a single battle in classical military strategy had profound results. The concentration of mass in limited areas also ensured very lethal battles.[3] The battles of Zama (202 B.C.), Agincourt (1415), and Crecy (1346) are all examples of lethal battles that had profound results.

Commanders conducting battle using classical military strategy

can see and direct the action of their entire army. Armies move as one large entity and clash on the field of battle as one large massed formation. Complex characteristics of maneuver are virtually impossible since generals normally only had one force to maneuver. One battle could decide the fate of empires in a single afternoon.[4] The emergence of operational art made conducting war more difficult and complex (see Appendix A).[5]

III. OPERATIONAL ART

DEFINITION OF OPERATIONAL ART

The practice of operational art constitutes the ways and means by which senior military commanders translate their nation's strategic aims into achievable tactical missions. The U.S. Army's FM 100-5, Operations defines operational art as "the skillful employment of military forces to attain strategic and operational objectives within a theater through the design, organization, integration, and conduct of theater strategies, campaigns, major operations and battles."[6] Operational art translates theater strategy into operational design which links and integrates the tactical battles and engagements that when fought and won, achieve the strategic aim.[7]

CURRENT THEORIES ON THE ORIGIN OF OPERATIONAL ART

The origin and concept of operational art are the focus of Dr. James J. Schneider's "The Loose Marble --- and the Origins of Operational Art." In this document, Dr. Schneider discusses the theoretical and practical differences between operational art and

classical military strategy. Schneider states, "the hallmark of operational art is the integration of temporally and spatially distributed operations into one coherent whole."[8]

According to Schneider, the key characteristic that distinguishes operational art from classical military strategy is the conscious employment of military forces in deep distributed operations. This shows the operational commander's deliberate intent to attack enemy objectives throughout the depth and width of a theater of operations. The heart of operational art, according to Schneider, is in the characteristics of simultaneous and successive operations.[9]

Schneider postulates that the emergence of operational art occurs in the mid-nineteenth century. Specifically he believes that General U.S. Grant's 1864-65 campaign during the American Civil War is the first example of modern operational art. Schneider develops a list of twelve criteria to determine the existence of operational art. Based on his own restrictive criteria Schneider concludes that operational art is only possible after the beginning of the Industrial Revolution.[10] However, in a footnote in his article about operational art, Schneider concedes that the thirteenth century Mongols may have actually practiced operational art.[11]

Another theory postulates that operational art emerges during the Napoleonic Era. In his book, Napoleon's Last Victory: 1809 and the Prelude to Modern War, Dr. Robert Epstein argues that operational art emerged with the adoption of the army corps structure during the Napoleonic era. The army corps structure allowed distributed maneuver over large areas and resulted in indecisive battles. Epstein argues

that Napoleon's decisive victories before 1809 were possible because he had an asymmetrical advantage over his enemies. This advantage resulted from the failure of Napoleon's opponents to adopt the corps structure before 1809. Once his enemies adopted the corps structure and armies became symmetrical (after 1809), indecisive battles resulted which required a series of battles throughout the depth of a theater of operations.[12] Another result of symmetrical armies was the beginning of wars of attrition. According to Epstein, this is when operational art began.

CRITERIA FOR DETERMINING THE EXISTENCE OF OPERATIONAL ART

Both Schneider and Epstein's theories have merit. However, both fall into the trap of adding more to operational art than is necessary. This study uses an unadorned framework of analysis for determining the existence of operational art.

The definition of operational art found in FM 100-5 is simple and clear. It outlines five criteria necessary for operational art. These five criteria are as follows: (1) the identification of military strategic goals, (2) establishing military conditions, (3) sequential and simultaneous operations, (4) resource allocation, and (5) commanders with broad operational vision.[13]

The first criterion, the identification of military strategic goals, requires the least amount of discussion, yet it is probably the most important of the five criteria. Strategic goals determine the focus of the entire campaign from start to finish. Military strategic goals should include an achievable military endstate.

The second criterion, establishing military conditions, includes

the identification of military conditions that achieve strategic goals. The identification of centers of gravity, decisive points, lines of operation, culmination, and establishing operational objectives are an integral part of this criterion. Establishing military conditions also helps to ensure that military strategic and operational goals agree.

Sequential and simultaneous operations, the third criterion, normally require the planning of phases. These phases help to set favorable conditions for the tactical battle. Sequential and simultaneous operations seek to focus combat power in space and time. Consideration of the branches and sequels are all a part of this criterion.

The fourth criterion, resource allocation, is necessary to accomplish the sequence of actions identified above. This includes organizing the theater, identifying lines of support, assigning missions and orchestrating operational functions.

The final criterion, broad operational vision, ensures that commanders use soldiers, material and time effectively in pursuit of the strategic aims assigned. Successful application of operational art demands commanders who can see beyond individual battles and visualize the conduct of military operations distributed in time and space. A broad operational vision requires a commander to anticipate the results of tactical engagements and likely enemy responses and carry out or adjust his plans and operations accordingly. The most significant part of broad operational vision is the commander's comprehension of the linkage between ends to means --- the

relationship between campaign aims and available military forces and actions.

These five criteria are all a part of the operational campaign, which is the commander's expression of the operational art. A campaign is a series of related operations designed to achieve strategic aims within a specific geographic area. It describes the linkage of each operation, in time and space, to the creation of the endstate. It is the real and tangible result of combining the ways and means available to a commander to attain a specific end.[14] Within a specific framework, determined by the strategic aims assigned to the commander, each operation in the campaign sets the conditions for following operations and thereby maintains the initiative. The goal of operational art is to destroy the enemy's capacity to wage war, through both the enemy's will and his means.[15]

The operational level commanders of the thirteenth century Mongol armies understood the translation of theater strategy into operational design through the integration of tactical battles. The Mongol method of warfare went beyond classical military strategy. A look at thirteenth century Mongol operations shows that the Mongols were early practitioners of operational art.

IV. THIRTEENTH CENTURY MONGOL WARFARE

Since the publication of Liddel Hart's The Great Captains in 1927, the Mongols have attracted the attention of military scholars worldwide.[16] The Mongol method of making war stemmed from a complex

of mutually reinforcing military and nomadic traditions developed among the Mongols from the reign of Genghis Khan to that of Kublei Khan (1206-1294). The thirteenth century Mongol operations were unprecedented because of the vast distances involved, the intricate synchronization of operations, the dispersion of forces and the planning, preparation, and coordination of operations.

The Khwarezmian Campaign (1219-1223) and the Central European Campaign (1241) are two examples of emerging operational art by the thirteenth century Mongols. Both of these campaigns clearly illustrate that the Mongol method of warfare went beyond classical military strategy and entered the realm of operational art.

THE KHWAREZMIAN CAMPAIGN (1219-1223)

Following sixteen years of tribal conflict, in 1206 Genghis Khan created a large and homogeneous Mongol empire in East-Central Asia. Quickly expanding his empire, Genghis Khan conquered the Hsia Empire (western China) in 1209 and the Chin Empire (central China) in 1215. The Mongols conquered and annexed the territory of Kara-Khitai (modern day Nepal) in 1217. Upon gaining Kara-Khitai, Genghis Khan's empire now bordered the Khwarezmian Empire. Exhausted by over ten years of continuous war, Genghis Khan signed a treaty of commerce with the Khwarezmian Empire in 1217.[17]

The Khwarezmian Empire (also known as Khwarezm), ruled by Mohammed Shah, spread across Turkestan, Persia, Afghanistan and northern India. The Khwarezmian eastern province of Transoxiana lay between the Amu Darya and Syr Darya rivers (see Map #1, Appendix B). Transoxiana's economic and cultural center was the great city of

Samarkand. Silk caravans from China went through Samarkand to reach both the Persian Gulf and the Black Sea. A highly profitable undertaking, commerce in silk supplied massive amounts of hard currency in a world without deficit financing. The silk trade was the greatest economic prize in Asia, and its key lay in Transoxiana.[18]

The seeds of the conflict began when one of the Shah's provincial governors massacred a caravan of Mongol merchants in the Khwarezmian city of Otrar in 1218. To avert war and protest the injustice, Genghis Khan sent an ambassador and two emissaries to Khwarezm. The Khwarezmians responded by killing the Mongol ambassador and cutting the beards off the two emissaries. Following this last episode, Genghis Khan decided to go to war with the Khwarezmian Empire.[19]

The Mongols began immediately to plan for war. On the basis of reports received from his Muslim advisors, Genghis Khan had been able to form an idea of the strength of the Shah's forces. He did not underestimate his prospective opponent. The Khwarezmian Army was nearly three times the size of the Mongol Army. The Mongols carefully prepared for war against the Shah. Genghis Khan and his senior military commanders developed the modern equivalent of a campaign plan.[20]

The Mongols determined, in advance, strategic as well as operational aims and missions for major subordinate units. Genghis Khan had three strategic aims: (1) punish Mohammed Shah, (2) annex Transoxiana, and (3) destroy the Khwarezmian Army. Mongol operational objectives to achieve the strategic aims included a simultaneous attack along a thousand kilometer front, seizure of Samarkand

(Transoxiana's capital), and a western limit of advance of the Amu Darya River. The Mongols conducted the campaign against the Khwarezmian Empire in six phases: (1) Preparation and Deployment, (2) Penetration, (3) the Main Attack, (4) Pursuit, (5) Consolidation, and (6) Redeployment.[21]

During the preparation phase, the Mongols accomplished several important tasks. The first task was mobilization of forces. In the spring of 1219, Genghis Khan ordered his far flung army to assemble east of Lake Balkhash on the Irtish River.[22] This assemblage was roughly equivalent to a modern army's movement to an operational staging area.

The Mongol force eventually reached a strength between 120,000 and 150,000 soldiers.[23] The decimal system was the basis of the Mongol Army's organization. The largest independent fighting unit was the toumen. Three toumens normally made up an army or a corps commanded by an orlok (Mongol field marshal). The toumen had ten regiments of 1,000 soldiers, each commanded by a noyan (Mongol baron). The regiment consisted of ten squadrons, each composed of ten squads of ten men. Distributed throughout the army were 10,000 Chinese artillerymen and siege engines organized into regiments.[24]

The Khwarezmian Campaign presented enormous logistical problems for the Mongols. Genghis Khan had to transport his forces a distance of three thousand kilometers through several mountain ranges and across many rivers. This required the construction of roads and numerous bridges.[25]

The Mongol operational center of gravity was the endurance and

speed of the Mongol ponies. The ponies gave the Mongol Army its superior mobility. Their superior mobility helped give the Mongol commanders freedom of action over their opponents. Though renowned for their superior endurance, the Mongol ponies still required food. This requirement for pasture lands had an impact on Mongol campaign planning.[26]

Genghis Khan chose the Irtish River as the Mongol secret staging area because of its central location and its many grassy pasture lands. The long distances travelled by the Mongol toumens to reach the staging area required Genghis Khan to order an operational pause which lasted several months. The assemblage of the Mongol Army in the spring of 1219 was the first of two major operational pauses in the campaign.[27] Each soldier in the Mongol Army brought a string of four or five horses with him on the campaign. The Mongols drove large herds of cattle and horses to the pastures around the staging area, to comfortably fatten them up during the operational pause.[28]

An important task during the preparation phase was intelligence collection and reconnaissance. Before the beginning of the Khwarezmian campaign, the Mongols sent numerous spies and scouts to Khwarezm. The Mongols also used Muslim interpreters to sow seeds of dissension within the province of Transoxiana. Many Mongol spies, disguised as merchants, had access to routes and many of the Khwarezmian cities and towns. Several Khwarezmian merchants also supplied the Mongols with detailed information about likely avenues of advance and the Khwarezmian Shah's troop dispositions.[29]

Based on the available intelligence, Genghis Khan and his

advisors developed a campaign plan for the defeat of the Khwarezmian Empire. They drew specific objectives along general axes of advance for each of their corps.[30] In addition to planning, the Mongols conducted intensive training. The Mongols used the operational pause to train the mobilized reserves, which made up two-thirds of the force, and integrate them into the standing army.[31]

Anotner task during the preparation phase was the requirement for the Mongols to hide their war preparations and protect their secret staging area. To mask his intentions and preparations, early in the spring of 1219, Genghis Khan sent one of sons Juji with a corps of three toumens (30,000 troops) into the Fergana valley towards the lower portion of the Amu Darya River. The plan was for Juji to conduct a feint against the southern Khwarezmian defenses.[32]

Juji's feint worked well. A Khwarezmian Army of 50,000 under the command of Mohammed Shah's son, Jelal ad-Din, moved into the Fergana Valley to destroy the Mongol raiders. As the Khwarezmians advanced, the Mongols withdrew. The Mongols fought a costly rear guard action and disengaged using the ruse of leaving their campfires burning at night and then setting fire to the prairie.[33] The Mongols withdrew behind the smoke screen. The Khwareznian troops made no effort to pursue the Mongols. Juji's diversionary maneuver effectively drew the attention of the Khwarezmian leadership towards the southern sector and helped to thwart a spoiling attack against the main Mongol assembly area near the Irtish River.

Genghis Khan made no further move for several months. Mohammed Shah, having mustered a force of nearly 400,000 hardened

Turkish/Muslim troops, felt reasonably assured that he could quickly halt any Mongol invasion.[34] He adopted a cordon defense system along the line of a wide river, the Syr Darya, facing north and east. A chain of walled towns strengthened this defensive line. Behind it lay Samarkand and Bukhara, two centers of Khwarezmian power lying west and south of the headwaters of the Syr Darya River.

The penetration phase began in the early fall of 1219 when the Mongol army moved from its staging area. The main Mongol force under Genghis Khan took a northerly route towards the fortified border town of Otrar. Genghis Khan's son Juji and the Mongol general Jebe Noyan led a supporting attack in the south through the Fergana Valley.[35]

Once again the Mongol force in the south drew the attention of the Khwarezmian Army. At the town of Kashgar, Juji and Jebe Noyan divided forces. Jebe led a two toumen corps (20,000 men) into Khurasan below the Amu Darya River with orders to draw off any major force that might be lying in reserve and advance into Transoxiana from the south.[36]

Juji rode west with a three toumen corps. Juji's task was the most formidible. His orders were to operate along the one thousand kilometers of enemy front, destroying all the major fortifications on the Syr Darya River except the ones between the towns of Otrar and Banakat. This would keep the Khwarezmian cordon defenses tied down while Genghis Khan and Jebe worked their way around either flank. Juji sent a portion of his army to take the town of Khojend to the west while the rest of his force moved north to attack the towns of Signak, Jend and Yanikant.[37]

In the late fall of 1219 Genghis Khan reached the Khwarezmian town of Otrar. In the vicinity of Otrar, Genghis Khan divided his main army into three groups. Genghis Khan's son Chagatai, commanding one corps of three toumens (30,000 men), had the important mission of capturing Otrar. A detachment of 5,000 men went upstream (south) along the Syr Darya to the town of Banakat. Genghis Khan, with a force of five toumens, crossed the Syr Darya River and moved west into the Kizil-Kum Desert.[38]

Mohammed Shah correctly surmised that Samarkand would be a major Mongol objective. Unfortunately, he also believed that the Mongols would not be able to storm the strongly fortified Khwarezmian citadels, and would therefore retire after a season of raiding and plundering. Later events would show that he was wrong on both accounts.[39] The Mongols were not merely raiding, they were conducting an operational campaign.

As planned, after taking Otrar, Chagatai wheeled south to clear the Syr Darya river line between Otrar and Banakat. Juji's forces seized Khojend after a tough fight in which most of the Khwarezmian garrison escaped. Juji continued to reduce Khwarezmian strongholds along the Syr Darya River. The Khwarezmian leadership continued to focus their attention on Jebe's army in the south and the fortified cities on the Syr Darya River. Genghis Khan's main army continued to maneuver undetected.[40]

Mohammed Shah began to panic when word reached him that the Mongols in the south (Jebe's corps) destroyed a Khwarezmian reserve force of 50,000 men. The Mongols pinned down most of the Khwarezmian

garrisons occupying the cordon defensive line along the Syr Darya River. This prevented the Shah from committing more men to turn and face Jebe's advance. The strongholds at either end of the cordon had already fallen. The Shah also could not commit more men without leaving Samarkand defenseless. His officers were advising him to evacuate Transoxiana altogether when the news came that Genghis Khan's main army had appeared outside the gates of Bukhara, over six hundred kilometers behind the Khwarezmian lines.[41]

The Mongol main attack achieved surprise by conducting an undetected and unexpected operational maneuver through an 'impassable' desert. Genghis Khan's force first overran the small town of Zarnuq after crossing the Syr Darya River. Instead of moving directly on Samarkand from Zarnuq, Genghis Khan moved along a little used trail through the Kizil-Kum Desert to the town of Nur. Genghis Khan's use of captured Turkoman prisoners as guides helped the Mongols navigate through the desert with ease. In February 1220 Genghis Khan reached Bukhara, six hundred kilometers in the Shah's rear and astride the Khwarezmian line of communication to the Shah's main army in Samarkand. B.H. Liddel Hart called Genghis Khan's operational maneuver one of the most dramatic surprises in the history of war.[42]

Unfortunately for Genghis Khan's main army, there were no pasture lands in the Kizil-Kum Desert. His army nearly reached its logistical culminating point before reaching Bukhara. After a three day siege, Bukhara fell to the Mongols. Genghis Khan entered the city and forced the citizens of Bukhara to open all the city's granaries to resupply the Mongol army.[43]

The rapid Mongol movements and the utter destruction they spread for miles on each side of their lines of march caused the Khwarezmians to exaggerate the Mongol strength. Mohammed incorrectly believed that the forces in the encircling Mongol armies outnumbered his own 400,000 men. Upon hearing the news of Genghis Khan's arrival at Bukhara, Mohammed Shah fled from Samarkand with his family and a small bodyguard. His intent was to mobilize other forces from throughout Khwarezm to protect the rest of his empire.[44]

In March 1220, Genghis Khan's main army turned east from Bukhara to storm Samarkand from the rear. Meanwhile, the armies of Chagatai and Jebe converged on Samarkand from the north and south. Juji continued to attack the fortified cities along the Syr Darya. The Mongols completely encircled the 40,000 to 50,000 Khwarezmian troops defending Samarkand by the end of March 1220.[45]

After a week long siege and an ill-timed break-out attempt by the Turkish-Khwarezmian force, the Mongol Army seized Samarkand. The Mongols cruelly sacked and destroyed the city. The Mongols massacred the defending garrison and much of the population.[46] The pursuit phase began immediately.

Genghis Khan sent a corps of three toumens under the command of Jebe and Subedei to pursue the Shah. By detaching such a force from the Mongol Army and allowing it to venture deep into the Khwarezmian empire shows that Genghis Khan did not expect any more major opposition. He would later discover that his assessment was incorrect. The Mongol force chased Mohammed relentlessly for eight months through his vast empire to the shores of the Caspian Sea.

Mohammed escaped his Mongol pursuers and fled to an island in the Caspian Sea, where he died in December 1220.[47]

The initial consolidation stage of the campaign occurred during the pursuit of Mohammed Shah. In the late spring of 1220, after the subjugation of Transoxiana, Genghis Khan marched the bulk of his army to the mountainous country south of Samarkand to rest his men and horses until the autumn of 1220. This was the second of two major operational pauses during the campaign. The Mongols covered the operational pause by organizing a mobile defense along the Amu Darya River to thwart counterattacks.[48]

Genghis Khan left most of the consolidation tasks to a three-toumen corps commanded by Juji. During the operational pause the Mongols trained recruited Persian and Turkish conscripts. Genghis Khan and his advisors also used the time to set up Mongol political rule in Transoxiana and to develop plans to defeat the remaining Khwarezmian forces outside of Transoxiana.[49]

In the summer of 1220, a newly created Khwarezmian Army led by the former governor of Khojend counterattacked the Mongols and temporarily interrupted the consolidation phase. The Khwarezmians secured the town of Gurganj, an important trade center and junction of caravan routes on the Amu Darya River near the Aral Sea. This Khwarezmian Army also managed to recapture the town of Yanikant from the Mongols. In the winter of 1220-1221, a Mongol corps of three toumens commanded by Ogadei rode to Gurganj. The Mongols launched a round-the-clock assault. After a few days the Mongols succeeded in entering the city, but the city's inhabitants defended every street in

fierce close combat. Both sides suffered heavy losses. The town finally fell in early April 1221.[50]

Genghis Khan continued to supervise the consolidation of his conquests. He also gave permission to Jebe and Subedei to conduct a reconnaissance in force through the Caucasus into Southern Europe.[51] Prolonged and ineffective Muslim resistance in Khwarezm continued in the towns of Herat, Merv and Bamian. In the summer of 1221, Mongol scouts and spies discovered that Jelal ad-Din, a son of Mohammed Shah, was raising a new army south of Transoxiana near Ghazni.[52]

While Genghis Khan concentrated his far flung forces he sent a three toumen corps, under the command of Mongol general Shigi Qutuqu, to defeat the Khwarezmians. The Khwarezmian force of 60-70,000 men soundly defeated the Mongols at the battle of Parwan in the Hindu Kush Mountains northeast of Ghazna.[53] This was a short-lived victory.

Genghis Khan, with a force of six to seven toumens, began a relentless pursuit of the victorious Jelal ad-Din. Many of Jelal ad-Din's Afghan allies deserted him, thus reducing his force to around 30,000 men. The six hundred kilometer pursuit of Jelal ad-Din stretched Genghis Khan's lines of communication. Fortunately for the Mongols, before reaching logistical culmination, they caught up to the fleeing Khwarezmians in December 1221.[54]

When the Mongols finally caught up with Jelal ad-Din's army on the banks of the Indus River near Peshawar, the Khwarezmians put up a courageous fight. A violent Khwarezmian counterattack almost broke the center of the Mongol Army, but Genghis rallied his men. The Mongols eventually caused the Khwarezmians to collapse by striking

them from two different directions. Jelal ad-Din and four thousand survivors escaped across the Indus River. After leaving a few toumens to pursue the fleeing remnants of Jelal ad-Din's force, Genghis Khan withdrew his army to continue to consolidate the Khwarezmian empire.[55]

The consolidation phase continued until the spring of 1223. In the summer of 1223, Genghis Khan left his son Juji in charge of most of the former Khwarezmian empire. He then began to make preparations for redeploying the bulk of the Mongol Army back to Mongolia. Genghis Khan left Juji with some elements of the Mongol Army. However, most of Juji's forces were conscripts from local nomadic tribes and the local Turkish population. In the autumn of 1223, Genghis Khan and the bulk of the Mongol Army began the long trek back to Mongolia.[56]

The Khwarezmian Campaign exhibited many of the characteristics of thirteenth century Mongol warfare at its best: acquisition of strategic intelligence necessary for operational maneuver; the use of speed and endurance to achieve both tactical and operational surprise; and timely coordination of widely dispersed forces. It all added up to conservation of scarce manpower and to victory. The Mongols brilliantly conceived and harmoniously executed the first four phases of the campaign (the preparation, penetration, main attack, and pursuit phases). The Mongols made nearly every move in a calculated, orderly sequence toward the achievement of their operational and strategic aims. The simultaneous attacks along a thousand kilometer broad front deceived the Khwarezmians of Genghis Khan's main attack.

The consolidation phase of the campaign was also successful, but

probably did not go exactly as planned. The Mongols sustained more casualties during the consolidation period (1221-1223) than during the first four periods combined. The complete collapse of the Khwarezmian government created several political, military, and religious issues that the Mongols had to address.[57]

Genghis Khan clearly recognized his own operational and logistical limitations after seizing Transoxiana. He halted the bulk of the Mongol Army at the Amu Darya River, despite the near route of all Khwarezmian troops in the vicinity. He seized most of the Khwarezmian territories next to Transoxiana as a security measure to protect his new province. Genghis Khan's understanding of his own culmination, played an important part in Mongol operational planning.

In addition to achieving his endstate, Genghis Khan secured his immediate economic goals, a defensible strategic frontier, and an operational base for the future invasions of Russia and the remaining Khwarezmian territories. Genghis Khan sought to concentrate his center of gravity (superior mobility) more rapidly than the Khwarezmians. The Mongols threw the effects of their superior mobility upon the most lucrative decisive points in the theater. Each Mongol operation within the campaign set the conditions for follow-on operations which helped the Mongols to destroy the Khwarezmian's capacity to wage war.

THE CENTRAL EUROPEAN CAMPAIGN (1241)

Genghis Khan died in 1227, but his successors carried on his method of warfare with extraordinary skill. Genghis Khan's son, Ogadei, became the new supreme khan in 1227.[58] In 1237, Ogadei sent

an army of 150,000 men to invade Eastern Europe. The Mongols had two chief strategic goals for the campaign: secure Mongol rule over Russia and extend Mongol rule and hegemony over the rest of Europe. The Mongols planned three major campaigns: (1) a campaign to secure Russia and eastern Europe (1237-1240), (2) a campaign to seize central Europe (1241), and (3) a campaign to conquer western Europe (1242-1245).[59]

The Mongols, under the command of Batu (son of Juji) and the great Mongol general Subedei overran the Russian principalities and much of Eastern Europe between 1237 and 1240. Following consolidation operations in Russia and an operational pause, the Mongols prepared to invade Central Europe. The operational aims in the Central European Campaign were to defeat the major powers in the region (Hungary, Poland, Bohemia, and Silesia), conduct simultaneous attacks along a broad front, and secure all territory between the Vistula River in the east and the Danube River in the west (see Map #2, Appendix B).[60]

The Central European Campaign included brilliant planning, operational-level maneuver, siege operations, large and small river crossing operations, and almost routine synchronization of operations. The Mongols conducted the campaign in five phases: (1) preparation, (2) approach march (3) simultaneous attack, (4) pursuit, and (5) consolidation.[61]

The Mongols carefully prepared for the Central European campaign. Subedei realized that Hungary, Poland, Bohemia, and Silesia could each raise forces larger than his own, and he was equally aware that an invasion of any one of these countries would bring the Mongols into

conflict with the other three. An invasion could also bring the Mongols into conflict with the Holy Roman Empire.[62]

The Mongols' knowledge of European politics made them confident that European disunity would keep powerful countries from involvement until the Mongols secured central Europe. Batu and Subedei took into account the possibility of an attack on their right flank from the north as they attacked Hungary. To counter such a threat and to protect the northern flank of the main body marching against Hungary, the Mongols planned a simultaneous attack on Poland. The central European monarchs knew very little about the Mongols and were largely ignorant of Mongol invasion plans.[63]

Subedei divided the Mongol Army of 120,000 (20,000 troops remained in Russia) into four corps of three toumens each. One corps, commanded by Baidar, son of Chagatai, was to conduct a supporting attack into Poland. A second corps, commanded by Shiban, Batu's brother, was to protect the main army's flank while invading Hungary from the north. Another corps, commanded by Kuyuk, son of Ogadei, was to protect the southern flank while invading Hungary from the south, through Transylvania and the Danube Valley. The main Mongol corps, commanded by Batu and Subedei, was to force the passes over the central Carpathian Mountains and invade the middle of Hungary. The three columns invading Hungary would meet on the Hungarian plains in front of Pest, on the east bank of the Danube opposite the capital, Buda.[64]

The Mongols spent the summer and fall of 1240 logistically preparing for the Central European Campaign. The primary logistics

task of the cavalry-based Mongol Army was maintenance of adequate horse pasturage and large stocks of remounts. With the hardy Mongol pony, capable of sustaining itself on sparse vegetation, the first task was not too difficult. The task of maintaining remounts was not as easy. The Mongols set up remount depots along the routes of advance as far west as the Vistula River and the Carpathian Mountain passes. The preparation of grazing lands and the movement of weapons and remounts occurred before the movement of combat forces.[65]

Siege warfare altered the characteristics of the Mongol logistics trains. The logistics train increased in size, swelled by the advent of Mongol siege weapons required to reduce European defensive positions. Chinese and Persian technicians manned many of the siege weapons. Chinese and Persian artisans also made and repaired weapons for the Mongols. The Mongol leadership had to assign Mongol warriors to guard the Chinese and Persian 'conscripts.' Feeding the technicians and artisans also increased the Mongols logistical burden.[66]

The Mongol supply system remained dependent upon foraging. Separate dispersed corps had logistical as well as operational advantages. Moving on a broad front ensured there would be enough forage for all Mongol corps. Due to the Mongol Army's dependency on foraging and grassy pasture lands, a good defense against a Mongol invasion was a scorched earth policy.[67]

In early February the Mongols began the approach march phase with the movement of Baidar's corps in the north. Baidar's mission was to attract the attention of the Poles, Bohemians, and Silesians from the

Mongol main objective of Hungary. In February 1241, Baidar entered the Polish territory of Lublin, burning the cities and laying waste to the countryside. On 13 February 1241 Baidar crossed the frozen Vistula River and plundered the town of Sandomir. The Mongols took the Poles completely by surprise. With no apparent opposition, the conditions seemed ideal for a quick conquest, but unfortunately Baidar's mission was merely to keep the northern European armies away from Hungary.[68]

In early March, Baidar decided to divide his corps to spread alarm and fear over as wide an area as possible. This was probably a calculated risk since the Mongols had determined that the Poles had not yet begun to mobilize their forces. Baidar, with two toumens, continued his advance southwest towards the Polish capital of Cracow. He sent one toumen, under the command of Kadan (son of Ogadei), northwest towards the Baltic coast and the territory of Masovia.[69]

On 18 March 1241, Baidar's Mongol force defeated the army of Boleslaw V of Poland outside of Cracow. Boleslaw V was the son-in-law of the King of Hungary. Boleslaw's army would have been one of the first to march to help the King of Hungary. Boleslaw and his family fled from Cracow to Hungary after the battle.[70]

Baidar next moved to Breslau where he and Kadan were to join forces. Arriving at Breslau at the end of March, before Kadan, Baidar began to lay siege to the city. Mongol scouts next reported to Baidar that Prince Henry of Silesia had assembled an army forty miles west of Breslau, near the town of Liegnitz, and that King Wenceslas of Bohemia was marching to join him. Baidar quickly abandoned the siege,

sent word to both Kadan in Masovia and Batu in Hungary, and set out at full steam to reach Liegnitz before King Wenceslas.[71]

As the Mongol toumens carried fire and sword through northeastern Europe, panic spread across the countryside. Terror-stricken refugees fled westward. As the Mongols destroyed and burned many towns in their path, the swarm of refugees increased and the tale of horror became amplified. By the time Baidar's two toumens of 20,000 men had reached Silesia in early April, the Europeans believed that his force was upward of 200,000 men.[72]

Despite their belief in these wild exaggerations, the chivalry of North-Central Europe prepared to fight. Prince Henry of Silesia gathered a mixed army of some 40,000 Germans, Poles, and Teutonic Knights, and took up defensive positions at Liegnitz in the path of Baidar's Mongol corps. King Wenceslas of Bohemia marched northward hastily with an army of 50,000 to join Henry.[73]

After pillaging large areas of Masovia and defeating one or two detachments of Duke Conrad of Masovia's army, Kadan joined Baidar on the road to Liegnitz. The united Mongol corps struck Prince Henry's army while the Bohemians were still two days' march away. The Europeans fought bravely and stubbornly. However, the Mongols destroyed Henry's army near Liegnitz on 9 April 1241. The few survivors of Henry's army fled westward. The Mongols suffered heavy casualties and did not pursue.[74]

Baidar had accomplished his mission. The Mongols devastated most of north-central Europe from the Baltic to the Carpathians. Baidar ended all possible danger to the right flank of Batu and Subedei's

army. The one remaining effective army of the region, King Wenceslas' Bohemians, withdrew to the northwest to join the hastily gathered forces of other German nobles. Baidar carried out his mission with remarkable efficiency. The Mongols then marched south towards Batu's main army.[75]

Batu and Subedei's main army in the south was equally effective. In early March, four weeks after Baidar moved towards Poland, Batu's army left its staging area. Presumably, Batu and Subedei wanted to await results in Poland before advancing on the main objective --- Hungary. Batu divided his main army into three columns (the fourth column was Baidar's army attacking in the north). Batu made the division to facilitate a rapid penetration of the Carpathian Mountain passes.[76]

The center column under Batu and Subedei forced the Carpathian passes south of Galich on 11 March 1241 and then proceeded south between Uzhgorod and Mukachevo. There, a Hungarian army awaited them. The Hungarian force suffered a major defeat on 12 March. Batu's center column covered over 300 kilometers in the four-day period between 12-15 March. On 15 March, Batu and Subedei reached the east bank of the Danube River and conducted a demonstration in front of Pest. King Bela IV of Hungary had gathered his army west of the river. Bela left Batu unmolested. Batu waited for the rest of his army to concentrate.[77]

The right corps (north), commanded by Shiban, went along the upper Vistula and through the Jablunsky Pass. Shiban had orders to advance as rapidly as possible. It was supposedly planned that he and

Batu would arrive at Pest almost simultaneously. Shibans column covered nearly seventy-five kilometers a day. On 17 March 1241, Shiban reached the Danube near the town of Vac. Shiban took the town by storm and then positioned his forces northwest of Batu.[78]

The left corps (south), commanded by Kuyuk, moved through Hungary via Moldavia and Transylvania. Kuyuk's task was probably to play a security role as well as to make a reconnaissance. At one point he split his corps up, one column followed the Koros River and the other moved along the Mures River through the towns of Arad and Szeged.[79]

King Bela IV of Hungary, after receiving word that the Mongols had advanced through the Carpathian passes on 12 March, called a council of war in Buda, 300 kilometers away. During the meeting he and his advisors considered ways to prevent the Mongols from continuing their invasion. While the council was in progress, on March 15, Bela received word that the Mongol advance guard had already arrived at the opposite bank of the river. Bela did not panic. Within two weeks he had gathered nearly 65,000 men. The broad Danube River and the fortifications of Pest held up the Mongols.[80]

Between 15 March and 31 March 1241, Batu found no opportunity to mount a successful attack on the Hungarian army, which lay behind the Danube. To break the stalemate, the Mongols withdrew to the east on 2 April, hoping to entice the Hungarians to follow them. King Bela took the bait and followed the Mongols.[81]

At the beginning of April, Bela marched eastward from Pest with his army, confident of repelling the invaders. The Mongols continued to withdraw as the Hungarian Army advanced. After several days of

cautious pursuit, Bela made contact with the Mongols late on 10 April 1241, near the Sajo River, almost 150 kilometers east of Buda.[82] The Hungarians surprised the Mongols by promptly and vigorously seizing a bridge over the Sajo River from a small Mongol detachment. Bela established a strong bridgehead beyond the river. He then encamped with the remainder of the Hungarian Army in a fortified camp on the west bank. Bela had received accurate and detailed information on the Mongol strength and dispositions. Bela knew that his Hungarian Army was considerably larger than the Mongol Army.[83] The Mongols, however, still maintained the initiative.

At dawn on 11 April 1241, the Mongols under Batu conducted a strong diversionary attack north of the Hungarians to seize a bridge over the Sajo River. The Hungarians counterattacked and drove the Mongols back to the east side of the Sajo River. Batu repeated his attempts to establish a bridgehead on the west side of the Sajo. These attempts caused the entire Hungarian Army to concentrate on Batu's forces. This is what Subedei and Batu wanted.[84]

The Mongol main effort, consisting of three toumens commanded by Subedei, was able to cross the Sajo unopposed in the south due to Batu's diversionary attack. The Mongols soon surrounded King Bela's army. By late morning on 11 April the Mongols settled the issue. The Hungarians realized that the situation was hopeless and used an opening in the Mongol lines (created by the Mongols) to flee. The Mongols pursued the Hungarians and then slaughtered the Hungarian soldiers in large numbers. King Bela and his brother escaped. The Mongols pursued relentlessly for nearly 150 kilometers. They sacked

and burned Pest and halted on the east bank of the Danube.[85]

The complete defeat of the Hungarian Army assured Mongol control of all eastern and central Europe from the Dnieper River to the Oder River and from the Baltic Sea to the Danube River. In four months the Mongols had beaten European armies totaling four to five times their strength. The whole of central Europe lay open to them.

The consolidation phase began immediately after the Mongols halted at the Danube River. Batu set up a rigid government in Hungary and Poland to control the local population and to help provide provisions for the Mongol army. The Mongols used the summer of 1241 to prepare for the invasion of western Europe, the next stage in the Mongol strategic plan to conquer Europe.[86]

The Mongols crossed the frozen Danube in December 1241. In January 1242, the Mongols halted all operations in central Europe and slowly withdrew to the east. Only because of the death of the supreme khan Ogadei, grand architect of the European campaign, were the Mongol corps recalled to Mongolia so the Mongol leadership could elect a new khan. The Mongols spared Europe, but Russia would wear the Mongol/Tartar yoke for at least two more centuries.[87]

The Central European Campaign is a great example of Mongol operational art. The Mongol translation of strategic aims into a campaign design linking and integrating tactical battles to achieve the strategic aim was exceptional. The sequential and simultaneous operations planned and executed in this campaign, throughout a one million square kilometer area, were unprecedented in the thirteenth century. The Mongols and their European adversaries were on two

separate intellectual levels of military development. The Europeans thought in terms of chivalry and pitched battles while the Mongols thought in terms of campaigns and operational maneuver. This fundamental difference in thinking helped to ensure Mongol success during this campaign.

V. ANALYSIS

In the thirteenth century, the Mongol Army was the best army in the world. The two historical examples of Mongol campaigns in the thirteenth century, showed that the Mongol method of warfare was successful because of their superior mobility and operational-level thinking. An analysis of thirteenth century Mongol operations using five criteria, based on the definition of operational art found in FM 100-5, shows that the Mongols practiced a form of operational art.

IDENTIFICATION OF MILITARY STRATEGIC GOALS

As stated earlier, the identification of strategic goals helps to determine the focus of the entire campaign from start to finish. In the Khwarezmian Campaign (1219-1223), the Mongols had political, economic, and military strategic goals. In the Central European Campaign (1241), the Mongols probably only had political and military goals.

Genghis Khan's military strategic goals in 1219 were to crush the Khwarezmian Army, seize the province of Transoxiana, and punish the Shah and the governor of Otrar. With clearly identified military goals, Genghis Khan's planners had the guidance needed to formulate a

campaign plan.

Ogadei Khan's military strategic goals in 1237 were more ambitious than earlier Mongol goals. Ogadei Khan's strategic goal was to annex Russia and extend Mongol hegemony and rule to all of Europe.[88] The Mongols planned three operational campaigns to achieve the Khan's strategic military goals. One of the planned campaigns was the Central European Campaign.

ESTABLISHING MILITARY CONDITIONS

According to this criterion, the Mongols next task should have been the determination of military conditions that achieved the identified strategic military goals. The determination of military conditions begins with the identification of operational aims. As discussed earlier, the Mongols identified operational objectives during the Khwarezmian Campaign and the Central European Campaign.

The Mongol leadership displayed an understanding of both friendly and enemy strengths and weaknesses. During both campaigns the Mongol strategic center of gravity was the supreme Mongol Khan. In 1242, the death of Ogadei Khan ended the Mongol invasion of western Europe. The Mongol operational center of gravity during both campaigns was the endurance and speed of the Mongolian pony. The Mongolian ponies gave the Mongol Army superior mobility over their opponents. The protection of this center of gravity was paramount since the Mongols fought outnumbered during both campaigns.

The Mongols believed that the operational center of gravity of their enemies during both campaigns was the opposing army. The Mongols considered Mohammed Shah the strategic center of gravity of

Khwarezm during the Khwarezmian Campaign. Genghis Khan's use of an entire Mongol corps commanded by two of his best generals (Jebe and Subedei) to pursue Mohammed Shah is an indication of this. During the Central European Campaign, the strategic center of gravity of the loose alliance of kingdoms was the most powerful kingdom, Hungary. The Mongols concentrated the bulk of their combat power against Hungary during the Central European Campaign.

The Mongols also displayed an understanding of decisive points. A decisive point is a point, usually geographical in nature, that, when retained provides a commander with a marked advantage over his opponent.[89] During the Khwarezmian Campaign the town of Otrar, the Fergana Valley, Bukhara, and Samarkand were all decisive points. During the Central European Campaign, decisive points included significant crossing sites along the Vistula and Danube Rivers, the Carpathian Mountain passes, Cracow, Buda and major mobilization sites for the European armies. It is also arguable that pasture lands for the Mongol horses were decisive points too. The lack of pasture land could adversely effect the superior mobility of Mongol forces. Securing decisive points gave Mongol commanders the flexibility to select from more than one line of operation for further advance.

Lines of operation, a concept for operational design, defines the directional orientation of the friendly force in time and space in relation to the enemy.[90] The Mongols tied lines of operation to decisive points within a theater of operations to achieve operational objectives. The Mongols used lines of operation in both campaigns to focus combat power toward a desired endstate.

There is strong evidence that Genghis Khan and other Mongol operational commanders understood the concept of culmination. In the offense, the culminating point is the point in time and location when the attacker's combat power no longer exceeds that of the defender. The art of the attack at all levels is to secure the objective before reaching culmination.

Fighting outnumbered during both campaigns, the Mongols were constantly in danger of reaching operational culmination. Superior mobility and concentrating forces at decisive points, helped the Mongols to avoid operational culmination. The Mongols had considerable problems with logistical culmination, however. The dependency of the Mongols on grassy pasture lands made them particularly vulnerable to reaching culmination during extended sieges. The Mongols could not stay in one area for very long due to the lack of fodder for their horses. Through luck and imaginative planning, the Mongols never reached operational or logistical culmination before achieving their operational aims during either campaign.

SEQUENTIAL AND SIMULTANEOUS OPERATIONS

In conducting operational art, commanders determine the best sequence of major operations that achieve a tempo of operations to reach the desired objective. Sequential and simultaneous operations require the planning of phases. The sequence of major operations (or the sequence of battles within a major operation) relates directly to the commander's decision on phasing.[91] The Mongols planned phases in both the Khwarezmian Campaign and the Central European Campaign.

FM 100-5 states "a phase represents a period during which a large number of forces are involved in similar activities (preparation and deployment for example)."[92] A transition to another phase, such as a shift from deployment to offensive operations, shows a shift in emphasis. These shifts in emphasis are an indication that the Mongols planned phases as a part of sequencing operations.

Branches and sequels relate directly to phasing. It is unknown whether the Mongols specifically planned for branches and sequels. Whether planned or unplanned, events often forced the Mongols to execute branches and sequels to operations. The Mongol reaction to the Khwarezmian counterattack during the consolidation phase in 1220 is an example of the absence of branches to their campaign plan. Branches are contingency plans (options built into the basic plan) for changing the disposition, orientation, or direction of movement of the force. The Mongols clearly did not expect further major resistance.

The Mongol reconnaissance in force to the Russian steppes (1220-1222) during the consolidation phase, is an example of a sequel. Sequels are subsequent operations based on the possible outcomes of the current operation. Genghis Khan anticipated success after capturing Samarkand in 1220, so he sent Jebe and Subedei to conduct a reconnaissance to gain information on Russia and the Caucasus region for possible future operations.

Timing and tempo provided the necessary momentum for Mongol attacks to achieve their operational objectives. Tempo is the rate of speed of military action; controlling or altering that rate is essential for maintaining the initiative. Once the Mongol armies

embarked on the execution of a plan which would set hundreds of kilometers between the various Mongol corps, it became imperative that they should adhere to the pre-established timetable. The pre-established timetable was key to the Mongol success in both campaigns. Timing and tempo were also major elements of Mongol simultaneous operations.

Within individual phases, the Mongols often conducted operations simultaneously. The Mongols had an appreciation of the simultaneous nature of operations. The Mongols illustrated this during the Khwarezmian Campaign by striking the Khwarezmian cordon defense at different locations, while simultaneously conducting a deep operational envelopment six hundred kilometers behind the Khwarezmian front lines. The simultaneous concentration of Mongol forces from three different against the Transoxiana capital of Samarkand in April 1220, is also an example.

The Mongol execution of their Central European Campaign (1241) is almost a textbook example on how to conduct simultaneous operations. The synergistic effect of simultaneous Mongol attacks in the north against Poland and Silesia and three hundred miles to the south against Hungary allowed the Mongols to defeat their opponents and achieve their theater aims. The Mongol ability to control and execute simultaneous operations involving the widely dispersed and rapidly moving Mongol Army allowed them to act faster than the European leaders could react. As a result, the European monarchs never fathomed the simultaneous campaign that the Mongols methodically waged against them. The Europeans never coalesced to formulate a coherent

plan of attack, which caused them to surrender all initiative to the numerically inferior, but simultaneously attacking Mongols.

RESOURCE ALLOCATION

Proper resource allocation is necessary to accomplish sequential and simultaneous operations. The Mongols' consideration of resources often outweighed all other considerations. The resources available to the Mongol commanders normally were significantly less than their opponents.

A significant resource which the Mongols lacked was manpower. The Mongols did not make conquests with overwhelming raw manpower. Typically fighting outnumbered, the Mongols never had abundant manpower. During the Khwarezmian Campaign, the Khwarezmian Army outnumbered the Mongol force of 120,000 men by a factor of three to one. During the Central European Campaign, the Europeans outnumbered the Mongol Army by at least two to one. The Mongols used superior mobility and operational art to make up for their inferior numbers.

The Mongols had few problems providing logistical support for their combat arms. One reason was the Mongolian pony. While the rest of the thirteenth century world used cavalry to support the foot soldier, the Mongol Army existed almost exclusively of cavalry. From an organic and logistical support approach, the Mongolian pony was the primary source of provisions for the army. Mares supplied milk and curd paste, which were staples of the Mongolian diet. Even the liquor that Mongol soldiers drank, a fermented whey called koumiss, came from their ponies. In times of deprivation, soldiers would temporarily open a pony's vein and drink the blood. A corps could reputably exist

subsist for ten days on blood alone, and could ride routinely for thirty days with no supplies except cooking utensils and small, felt tents. It is difficult to imagine a more totally integrated logistical support system.[93]

However, if one lives by the horse, one can also perish with the horse. Although the Mongolian pony did not require barley or grain, it did need grass. If soldiers could not find forage their ponies would starve, therefore, the Mongol Army could not survive without grass. Barren land was not a serious problem if the Mongol corps kept moving. Each soldier with an average of three to four ponies, would switch mounts every few hours to keep the animals from tiring.[94]

The availability of pasture often determined Mongol movements. This limitation on the Mongols' logistical capabilities at times proved a severe handicap in besieging cities. In fact, knowledgeable observers of the Mongol style of warfare suggest that a scorched-earth policy was the best deterrent to a Mongol advance.[95] Nonetheless, Mongol logistics allowed mass mobilization at much less expense then in thirteenth century Europe, at the acceptable price of continual reliance on foraging inside their opponents' frontiers. The Mongol leadership displayed broad operational vision by linking Mongol operational movements to Mongol logistical limitations.

BROAD VISION

The final characteristic of operational art evident in Mongol warfare was the presence of commanders with broad operational vision. Genghis Khan was foremost among all Mongol commanders in this area. During the Khwarezmian Campaign, Genghis Khan displayed an ability to

see the interdependence and logical sequence of events and turn his vision into a successful campaign. Subedei, as well as Batu and Baidar, displayed broad operational vision during the Central European Campaign. Subedei's ability to look beyond the current situation and see a logical sequence of events was evident throughout the campaign. The successful Mongol simultaneous attacks against Poland and Hungary would not have been possible without commanders with a broad operational vision.

VI. CONCLUSIONS AND IMPLICATIONS

The thirteenth century campaigns of Genghis Khan and his Mongol successors do not conveniently fit into the classical military category. A characteristic of classical military strategy or the "strategy of a single point" was densely packed masses with no linear extension or depth. Complex operations in time and space are nonexistent in classical military strategy. Based on the historical examples, thirteenth century Mongol warfare was definitely not classical military strategy. The Mongols conducted operational level maneuvers with corps hundreds of kilometers a part. The Mongols used a strategy of not merely a single point, but multiple points to achieve synergistic effects over their opponents.

There are several theories of the origin of operational art. Dr. Schneider argues that the first example of operational art is in the mid-nineteenth century during the American Civil War. Schneider weakens his argument by not being able to account for the thirteenth

century Mongols. When discussing classical military strategy in his article "The Loose Marble --- and the Origins of Operational Art," Schneider states in a small footnote that a possible exception to classical military strategy might be the military art practiced by the Mongols. Though he acknowledges that the Mongols practiced a form of operational art, he fails to develop this 'challenge' to his belief that operational art began six hundred years after the Mongols.

Dr. Epstein's argument that operational art began during the Napoleonic era is also lacking, due to the omission of the thirteenth century Mongols. Epstein argues that operational art emerges with the adoption of the army corps structure, during the Napoleonic era, because it allowed distributed maneuver over large areas. Epstein does not explore the distributed maneuver conducted by the Mongol corps during the thirteenth century. Epstein dismisses the Mongol warfare as irrelevant, due to the lack of primary resources available on the Mongols.[96]

Both Schneider and Epstein appear to revel in making operational art as complex a subject as possible. Operational art is the skillful employment of military forces to attain strategic and operational objectives within a theater.[97] Operational art is not some great 'mystical entity' that is undefinable. FM 100-5 accurately defines operational art. Operational art merely translates theater strategy and design into operational design which links and integrates the tactical battles and engagements that, when fought and won, achieve the strategic aim.[98]

This study uses five criteria, based on FM 100-5, to determine

the existence of operational art. These criteria are: the identification of military strategic goals, establishing military conditions, sequential and simultaneous operations, resource allocation, and commanders that display a broad operational vision. Using these criteria, thirteenth century Mongol warfare is an example of emerging operational art. This assertion has implications for the study of operational art.

There are a number of implications for the study of the historical practice of operational art. First, the School of Advanced Military Studies (SAMS) must stop acting as if thirteenth century Mongol operational warfare did not exist or was irrelevant. Second, by purporting arguments that operational art began with either Americans or Europeans, SAMS merely reinforces an ethnocentric view of military history among its students.

Other nations such as Russia, China, India, Iran, Vietnam, and Korea all study thirteenth century Mongol warfare.[99] SAMS does not devote a single lesson out of a total of seventy-five lessons in its theory or history courses to thirteenth century Mongol warfare. This is a disservice to both the students of SAMS as well as the overall study of operational art. A more appropriate name for the U.S. Army's advanced military studies program would be the School of Advanced Euro-American Military Studies due to its ethnocentric view of operational art. Maybe one day American military schools, such as SAMS, will teach an appreciation for non-European operational art, like that practiced by the thirteenth century Mongols.

ENDNOTES

1. James J. Schneider, "The Loose Marble --- and the Origins of Operational Art," Parameters (March 1989) 86. G.S. Isserson. The Evolution of Operational Art. excerpts reprinted in A. B. Kadishev. Questions of Strategy and Operational Art in Soviet Military Writings from 1917 to 1940 (Moscow: Voenizdat, 1965), 418.

2. Ibid., 86.

3. Ibid., 87.

4. Ibid., 87.

5. James J. Schneider, "Theoretical Paper NO.3: The Theory of Operational Art," (School of Advanced Military Studies, Fort Leavenworth, Kansas, 1988), 14.

6. U.S. Department of the Army, Field Manual 100-5, Operations (Washington, D.C.: U.S. Government Printing Office, 1993), 6-2.

7. Ibid., 6-2.

8. Schneider, 87.

9. Ibid., 87-88.

10. James J. Schneider, "Vulcan's Anvil: The American Civil War and the Emergence of Operational Art," (School of Advanced Military Studies, Fort Leavenworth, Kansas, 1991), 35-38.

11. Schneider, "The Loose Marble --- and the Origins of Operational Art," 98.

12. Robert M. Epstein, "Patterns of Change and Continuity in Nineteenth-Century Warfare," The Journal of Military History, (July 1992), 388.

13. FM 100-5, Operations, 6-2 to 6-3.

14. Ibid., 6-3.

15. James J. Schneider and Lawrence L. Izzo, "Clausewitz's Elusive Center of Gravity," Parameters, (September 1987) 57.

16. Steven D. Steinmetz, "Clausewitz or Khan? The Mongol Method of Military Success," Parameters (Spring 1984), 71-72. Initially, proponents of armored warfare like Liddel Hart cited the Mongols as evidence for the potential efficacy of the tank. Later, military

practitioners such as Erwin Rommel and George Patton studied them for insights into mobile operations.

17. Trevor N. Dupuy, The Military Life of Genghis Khan (New York: Franklin Watts, Inc., 1969), 59. General Sir Richard Gale, Kings at Arms (London: Hutchinson of London, 1971), 82. Anthony Livesey, Great Commanders and Their Battles (New York: Macmillan Publishing Co., 1987), 30-31. Leo de Hartog, Genghis Khan (London: I. B. Tauris and Company, Ltd., 1989), 86. Mohammed Shah, the Khwarezmian ruler, initially objected to free trade with Mongolia. This stemmed from suspicians that it would be used for espionage on behalf of Genghis Khan. Commerce with settled neighboring countries was of great importance to the nomadic Mongols. Most of their clothing derived from this trade. After military operations in central China, which laid waste to large agricultural lands, the Mongols had to import grain from other regions. In this trade, Muslims were the middlemen. Genghis Khan's request for free trade served a common interest. This common interest and mutual benefit caused many Muslims to support Genghis Khan.

18. James Chambers, The Devil's Horsemen (Scranton: Haddon Craftsmen, Inc., 1979), 2-3. W. Barthold, Turkestan Down to the Mongol Invasion (London: Luzac, 1928), 395.

19. Hartog, 84-87. Dupuy, Genghis Khan, 60. Gale, 82. From contemporary accounts it is difficult to determine if Genghis Khan's intention all along was to go to war with the Khwarezmian Empire. The Mongols may have seen war as an eventuality, but were not expecting a conflict in 1219.

20. Paul Ratchnevsky, Genghis Khan, His Life and Legacy, (Cambridge: Basil Blackwell,Inc., 1991), 129-130. Hartog, 98-100.

21. Chambers, 6-20. Hartog, 98-114. The six phases of the campaign are based on the events of the campaign. There is no record of the actual Mongol campaign plan.

22. Ralph Fox, Genghis Khan (New York: Harcourt, Brace and Company, 1936), 198. Chambers, 8-9. Hartog, 98.

23. R. Ernest Dupuy and Trevor N. Dupuy, The Encyclopedia of Military History From 3500 B.C. to the Present (New York: Harper and Row, Publishers, 1986), 364. Hartog, 98. Stienmetz, 77. The estimates of the size of the Mongol Army vary from 90,000 to 240,000 men. Most authoritative accounts place the size of the Mongol between 120,000 and 150,000.

24. B. H. Liddel Hart, Great Captains Unveiled (Edinburgh: William Blackwood and Sons Ltd., 1928), 13. Fox, 201. Livesey, 34. Glenn H. Takemoto, "Back Azimuth Check: A Look At Mongol Operational Warfare" (School of Advanced Military Studies, Fort

Leavenworth, Kansas, 1992), 13.

25. Fox, 198. Lamb, 116. Livesey, 34.

26. Steinmetz, 74-75. Hartog, 46-47.

27. Fox, 198. The second operational pause occured in 1221 following the capture of Samarkand.

28. Lamb, Genghis Khan, 116-117. Hartog, 100.

29. S. R. Turnbull, The Mongols (London: Osprey Publishing Ltd., 1980) 24. Hartog, 86-87.

30. Dupuy, Military History, 369. Hartog, 50.

31. Takemoto, 12. Hartog, 50-51.

32. Fox, 199. Lamb, 125.

33. Fox, 199. Chambers, 7-8.

34. Hartog, 96. Barthold, 371-372. The intelligence report that Mohammed Shah received from his envoy in China, Baha al-Din Razi, played an important part in the development of Khwarezmian defensive plans. During their 1215 campaign in central China, the Mongols seemed to be invincible on the field of battle, but had problems with capturing fortified towns. Mohammed Shah hoped that the Khwarezmian fortified cities would present the Mongols with insurmountable problems and force them to end their invasion prematurely. Unbeknownst to the shah, the Mongols realized their shortcomings in their central China campaign and now employed Chinese engineers to build and man seige engines to defeat fortified towns.

35. Lamb, 133-134. Chambers, 9.

36. Chambers, 9-10. Fox, 201.

37. Chambers, 10.

38. Chambers, 10-11. Hartog, 100. Lamb, Genghis Khan, 133-134.

39. Lamb, Genghis Khan, 133-134. Mohammed Shah expected reinforcements, however, Jebe's force in the south cut off the Shah's reinforcement. Aroused by the new danger of Genghis Khan's main force in the north, Mohammed Shah did something which his chroniclers in later years severely criticized him for. He split his forces in half among the fortified cities. He sent forty thousand trcops to strengthen garrisons along the Syr Darya, thirty thousand troops went to Bukhara and the rest of his force he personally led to Samarkand.

40. Fox, 202. Chambers, 11. Barthold, 147. There is disagreement among scholars as to what Mongol force captured Khojend. Regardless of the actual force that captured the town, most agree that the governor of Khojend and most his garrison escaped.

41. Dupuy, Genghis Khan, 66. Hartog, 100. Liddel Hart, 15.

42. Liddel Hart, 15. Hartog, 100-101.

43. Fox, 202. Lamb, 137. The Mongols were lucky they encountered little resistance when they seized Bukhara, because their horses were exhausted from the long desert march.

44. Hartog, 102. Ratchnevsky, 130.

45. Lamb, 139-140. Hartog, 102-103.

46. Hartog, 103. Chambers, 15.

47. Chambers, 16. Hartog, 106. Lamb, Genghis Khan, 142. Depending upon the source, Mohammed Shah died in either December 1220 or in January 1221.

48. Hartog, 104.

49. Dupuy, Military History, 366. Hartog, 104. Chambers, 16.

50. Hartog, 109. Steinmetz, 78.

51. Hartog, 107. Chambers, 17.

52. Dupuy, Military History, 366. Hartog, 113.

53. Hartog, 113. Ratchnevsky, 133. Dupuy, 366.

54. Ratchnevsky, 134. Hartog, 114.

55. Dupuy, Military History, 366. Hartog, 114. Ratchnevsky, 134.

56. Hartog, 127. Ratchnevsky, 137-140.

57. Chambers, 15. Hartog, 109-115. Ratchnevsky, 134.

58. Dupuy, 373.

59. Chambers, 49-50. Hartog, 180. The Mongol plan to extend Mongol rule to the Atlantic Ocean was very deliberate. In 1227, the Mongol general Subedei estimated that it would take nearly eighteen years to subdue Europe.

60. Dupuy, 375-376. Hartog, 169-170.

61. Dupuy, 374-376. Chambers, 93-97. The Mongol campaign phases are derived from the events of the Mongol invasion of Central Europe. The actual Mongol campaign plan is unknown.

62. Dupuy, 375-376. Hartog, 165-166.

63. Chambers, 85-95. Dupuy, 376-377. The European monarchs were aware that the Mongols were planning on invading, but knew nothing of Mongol operational plans or even the organization of the Mongol Army.

64. Hartog, 171. Chambers, 81-82.

65. Steinmetz, 74-75.

66. Richard D. McCreight, "The Mongol Warrior Epic: Masters of Thirteenth Century Maneuver Warfare" (U.S. Army Command and General Staff College, Fort Leavenworth, Kansas, 1983), 72.

67. Dupuy, 370. Steinmetz, 75.

68. Dupuy, 376-377. Chambers, 96-99.

69. Chambers, 96.

70. Dupuy, 377. Hartog, 172.

71. Chambers, 97-98.

72. Dupuy, 377.

73. Hartog, 172. Dupuy, 377.

74. Chambers, 98-100. Dupuy, 377.

75. Dupuy, 377.

76. Hartog, 173-174. Dupuy, 377-378.

77. Hartog, 174. Chambers, 92-95.

78. Hartog, 174-175. Chambers, 93.

79. Hartog, 174. Chambers, 93.

80. Dupuy, 378. Hartog, 175.

81. Dupuy, 378. Chambers, 95.

82. Hartog, 175. Dupuy, 378.

83. Dupuy, 378. Hartog, 175-176. On the evening of 10 April 1241, a Russian deserter told the Hungarians that the Mongols would attack that night. The Mongols did in fact begin their attack that night.

84. Hartog, 176. McCreight, 134. Dupuy, 378.

85. McCreight, 136-139. Hartog, 176. Chambers, 103-104.

86. Dupuy, 379. Hartog, 176-177.

87. Dupuy, 379. Hartog, 177-181. Chambers, 112-113. Takemoto, 21.

88. Chambers, 49. Dupuy, 374.

89. FM 100-5, Operations, Glossary-2.

90. Ibid., 6-7.

91. Ibid., 6-9.

92. Ibid., 6-9.

93. Joseph G. Meaney, "Genghis Khan: A Logistical Genius" Program Manager (July-August, 1986), 28.

94. Ibid., 28.

95. Steinmetz, 75.

96. The comment concerning the lack of primary sources on the thirteenth century Mongols was made by Dr. Epstein during a discussion in his office on 20 January 1994.

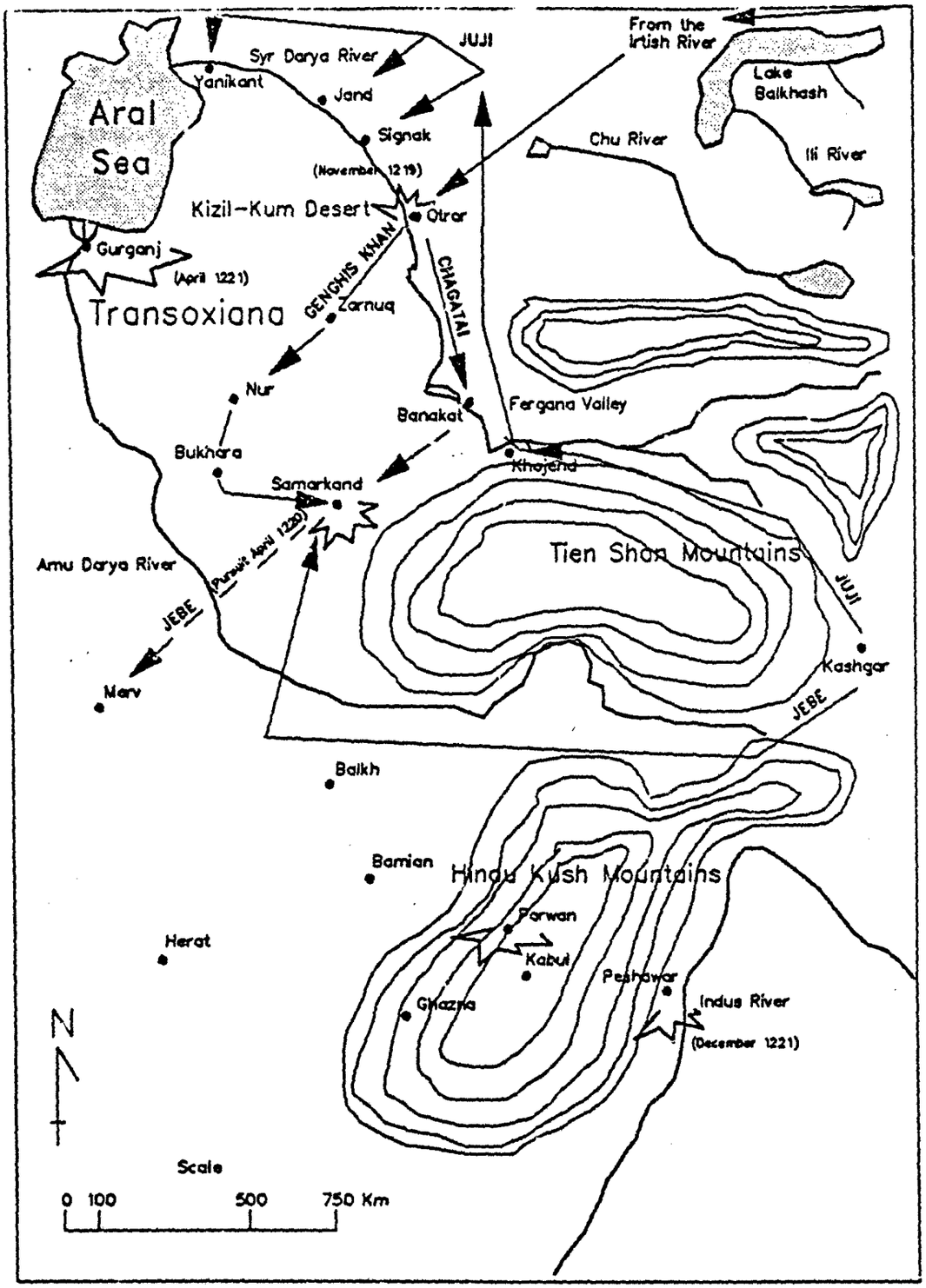
97. FM 100-5, 6-2.

98. Ibid., 6-2.

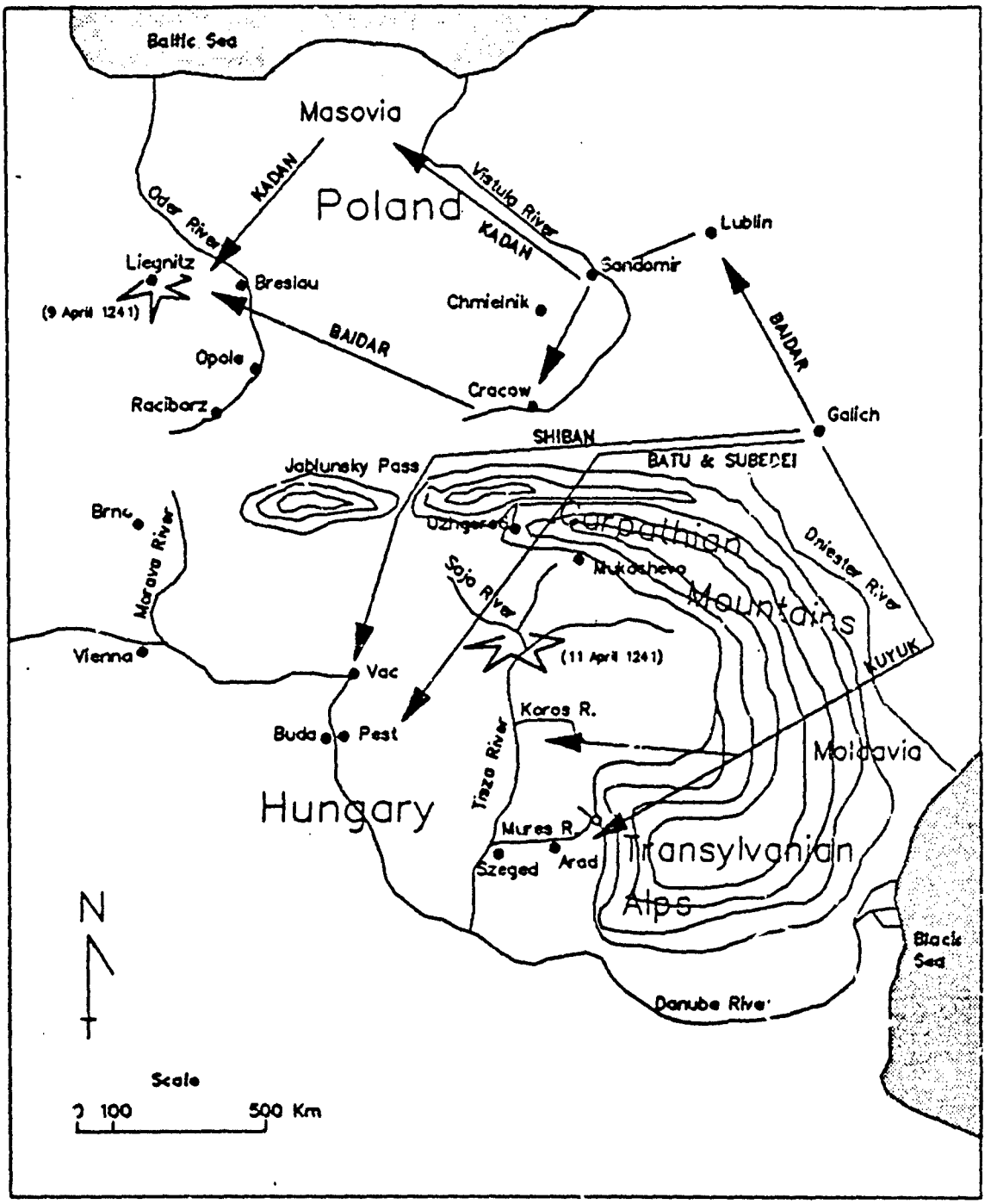
99. Dupuy, Military History, 357-433. The thirteenth century Mongols had a dramatic effect on the histories of Russia, China, Iran, Iraq, Afghanistan, Vietnam, Korea and many other nations where modern U.S. forces could deploy.

Classical Strategy	Operational Art
1. Manuever to contact.	1. Battles and engagements begin immediately at the national borders.
2. Armies collide in decisive battle.	2. Several armies fight indecisive battles.
3. Logistics is a consideration only in initial phases of campaign.	3. The only decisive battle is the last battle of the war.
4. Vigorous pursuit after battle.	4. Logistics considerations impose pauses upon operations often before pursuit can be decisive.
5. Campaign ends.	5. Wars consist of several campaigns; campaigns consist of several distinct operations; operations consists of several distinct battles and maneuvers.
6. Generally war is also terminated.	6. Operational Art is strategy with the added dimension of depth.
7. The commander sees the entire battlefield.	7. The commander sees very little of the many simultaneous battles occurring.

Appendix A: Classical Strategy vs. Operational Art [5]



Appendix B, Map 1: The Khwarezmian Campaign (1219-1223)



Appendix B, Map 2: The Central European Campaign (1241)

BIBLIOGRAPHY

Government Publications

U.S. Department of the Army. Field Manual 100-5. Operations. Washington, D.C.: Government Printing Office, 1993.

Books

Allsen, Thomas T. Mongol Imperialism. Berkeley: University of California Press, 1987.

Barraclough, Geoffrey, ed. The Times Concise Atlas of World History. Maplewood: Hammond Incorporated, 1982.

Barthold, W. Turkestan Down to the Mongol Invasion. London: Luzac, 1928.

Bellamy, Christopher. The Evolution of Modern Land Warfare. London: Routledge, 1990.

Bellamy, Christopher. The Future of Land Warfare. New York: St. Martin's Press, 1987.

Chambers, James. The Devils' Horsemen. Scranton: Haddon Craftsmen, Inc., 1979.

Curtain, Jeremiah. The Mongols. Boston: Little, Brown, and Company, 1907.

Dupuy, R. Ernest and Trevor N.Dupuy. The Encyclopedia of Military History From 3500 B.C. to the Present. New York: Harper & Row, Publishers, 1986.

Dupuy, Trevor N. The Evolution of Weapons and Warfare. Indianapolis: The Bobbs-Merrill Company, Inc., 1980.

Dupuy, Trevor N. The Military Life of Genghis Khan of Khans. New York: Franklin Watts, Inc., 1969.

Elting, John R. The Superstrategists: Great Captains, Theorists and Fighting Men Who Have Shaped the History of Warfare. New York: Scribner, 1985.

Embree, Ainslie T., ed. Encyclopedia of Asian History. New York: Charles Scribner's Sons, 1988.

Fox, Ralph. Genghis Khan. New York: Harcourt and Company, 1936.

Gale, General Sir Richard. Kings at Arms. London: Hutchinson of London, 1971.

Greene, Joseph I. The Infantry Journal Reader. New York: Doubleday, Doran, and Company, Inc., 1944.

Goodenough, Simon. Tactical Genius in Battle, edited by Len Dieghton. New York: Dutton, 1979.

Halperin, Charles J. Russia and the Golden Horde. Bloomington: Indiana University Press, 1987.

Hart, B. H. Liddell. Great Captains Unveiled. Edinburgh: William Blackwood and Sons Ltd., 1928.

Hartog, Leo de. Genghis Khan. London: I. B. Tauris and Company, Ltd., 1989.

Humphrey, Judy. Genghis Khan. New York: Chelsea House Publishers, 1987.

Lamb, Harold. Genghis Khan, The Emperor of All Men. Garden City: Doubleday and Company, 1927.

Lamb, Harold. The March of the Barbarians. New York: Doubleday, Doran, and Company, Ltd., 1940.

Livesey, Anthony. Great Commanders and Their Battles. New York: Macmillan Publishing Company, 1987.

Marshall, Robert. Storm from the East: From Genghis Khan to Kublilai Khan. Berkeley: University of California Press, 1993.

Martin, H. Desmond. The Rise of Chingis Khan and His Conquest of Northern China. Baltimore: The John Hopkins Press, 1950.

Montross, Lynn. War Through the Ages. New York: Harper and Row, Publisher, Inc., 1960.

Morgan, David. The Mongols. Cambridge: Blackwell Ltd., 1991.

Nicolle, David. The Mongol Warlords: Genghis Khan, Kublai Khan, Hhuelghu Tamerlane. Firebird, New York: Military Service, 1990.

Oman, C. W. C. The Art of War in the Middle Ages. Ithaca: Cornell University Press, 1953.

Onon, Urgunge. The History and the Life of Chingis Khan (The Secret History of the Mongols). New York: E. J. Brill, 1990.

Rash Id Al-Din. The Successors of Genghis Khan. Translated by John A. Boyle. New York: Columbia University Press, 1971.

Ratchnevsky, Paul. Genghis Khan, His Life and Legacy. Cambridge: Basil Blackwell, Inc., 1991.

Severin, Timothy. In Search of Genghis Khan. New York: Atheneum, 1992.

Spuler, Bertold. History of the Mongols. Berkeley: University of California Press, 1968.

Turnbull, S. R. The Mongols. London: Osprey Ltd., 1980.

Journal and Magazine Articles

Bellamy, Christopher D. "Heirs of Genghis Khan: The Influence of the Tartar-Mongols on the Imperial Russian and Soviet Armies," RUSI. (March 1983): 52-60.

Bellamy, Christopher D. "Swift Flight of the Parthian, Great Captains of Asia," Military Review. (July 1987): 30-39.

Cadwalader, M.H. "Genghis Khan: Greatest Conqueror," Coronet. (June 1953): 114-118.

Dickey, Robert. "And Still the West Won't Learn," Armor. (January-February 1954): 26-31.

Epstein, Robert M. "Patterns of Change and Continuity in Nineteenth-Century Warfare," The Journal of Military History. Vol. 56, No. 3 (July 1992): 375-388.

Hardwick, G.A. "Riders of the Whirlwind," U.S. Naval Institute Proceedings. (September 1957): 978-986.

Heral, Ethan. "Yasotay and the Mangoday of Genghis Khan." Armed Forces Journal. (January 1985): 38-69.

Lattimore, Owen. "Chingis Khan and the Mongol Conquests," Scientific American. (August 1963): 54-68.

Meaney, Joseph G. "Genghis Khan: A Logistical Genius," Program Manager. (July-August 1986): 27-30.

Patrick, Stephen B. "Empires of the Middle Ages." Strategy & Tactics. (May-June 1980): 23-27.

Pittard, Dana J. H. "Genghis Khan and 13th-Century Airland Battle." Military Review. (July 1986): 18-27.

Schneider, James J. "The Loose Marble --- and the Origins of

Operational Art." Parameters. (March 1989): 85-99.

Schneider, James J. and Lawrence L. Izzo. "Clausewitz's Elusive Center of Gravity." Parameters. (September 1987): 46-47.

Steinmetz, Steven D. "Clausewitz or Khan? The Mongol Method of Military Success," Parameters. (Spring 1984): 71-80.

Uhrig, Henry T. "An Early Thunderbolt," Military Review. (August 1970): 75-82.

Vickers, Ralph. "The Mongols and Their Impact on the Medieval West." Strategy & Tactics. (March-April 1973): 23-28.

Walker, C. C. "Jenghiz Khan's Invasion of South Western Asia." Canadian Defence Quarterly. (October 1932): 23-39.

Walker, C. C. "Jenghiz Khan: The Last Campaign." Canadian Defence Quarterly. (July 1933): 156-173.

Unpublished Dissertations, Theses and Papers

Boyd, John R. A Discourse on Winning and Losing. August 1987.

Epstein, Robert M. "Eagles Triumphant, Napoleon and Eugene in the War of 1809." School of Advanced Military Studies, Fort Leavenworth, Kansas, undated.

Jordon, Stephen T. "Operational Art: Practical Utility or Defunct Doctrinal Concept." School of Advanced Military Studies, Fort Leavenworth, Kansas, 1991.

McCreight, Richard D. "The Mongol Warrior Epic: Masters of Thirteenth Century Maneuver Warfare." U.S. Army Command and General Staff College, Fort Leavenworth, Kansas, 1983.

Schneider, James J. "Theoretical Paper NO.3: The Theory of Operational Art." School of Advanced Military Studies, Fort Leavenworth, Kansas, March 1, 1988.

Schneider, James J. "Vulcan's Anvil: The American Civil War and the Emergence of Operational Art." School of Advanced Military Studies, Fort Leavenworth, Kansas, June 16, 1991.

Takemoto, Glenn H. "Back Azimuth Check: A Look At Mongol Operational Warfare." School of Advanced Military Studies, Fort Leavenworth, Kansas, 1992.

Taylor, W.S. "Genghis Khan: Leadership for the Airland Battle." Air Command and Staff College, Maxwell Air Force Base, Alabama, 1988.