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Sustaining The Tempo:
A New Method of Overwatch

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A Monograph
by

Major Anthony J. Tata

Infantry

MENS EST CLAVIS VICTORIAE

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Fort Leavenworth, Kansas

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ABSTRACT

General Schwarzkopf was unhappy with the tempo of the VII Corps attack during Operation Desert Storm. Likewise, a recent Rand study of over 115 NTC battles highlighted the technique of overwatch as a significant detractor to sustaining tempo in the attack.

As the new Field Manual 100-5, Operations, completes the evolution of American doctrine from the 1976 Active Defense to the 1992 notion of Quick, Decisive Victory with Minimum Casualties, the U. S. Army must ensure its tactics change to support the new vision. The capstone doctrine calling for elevated tempo diverges with the cautious overwatch technique.

The purpose of the monograph is to analyze the components of fire and maneuver and determine if overwatch is an insufficient technique for sustaining tempo in the attack. Likewise, the methodology seeks to determine the best method of maintaining tempo and protecting the attacking forces.

BG Hamilton Howze and then LTC William E. DePuy developed the technique of overwatch shortly after World War II. Essentially, DePuy devised the idea of overwatch from stationary positions based upon the declining quality of his infantry and technological limitations. Further, overwatch is rooted in the American Army's traditional reliance on firepower.

As such, the methodology pursues a historical review of German use of Soviet tactics to achieve elevated tempo, a summary of relevant theory, a study of physics in the attack, and an analysis of American and Russian attack tactics.

The research concludes that the American technique of overwatch hinders the tempo of force in the attack. History shows that other attack techniques are available to sustain offensive tempo. Theory reveals that when fire and maneuver are segregated, tempo suffers enormously. Likewise, physics asserts that units that achieve positive acceleration can bring greater force to bear on the enemy. Pressure is a function of force over the area, or battlespace. As such, elevated levels of force increase the pressure on the enemy, negating his ability to react and increasing the attacker's tempo.

Likewise, current Russian doctrine emphasizes the full integration of fire and maneuver to achieve maximum tempo. Russian tactics stress surprise, speed, and maneuver of fire as the doctrinal underpinnings of sustaining tempo. Likewise, they advocate infiltration of overwatch systems, suppressing from the move, using artillery in direct and indirect fire modes, and the employment of forward detachments.

American doctrine would do well to adapt a more aggressive approach to the offensive by pursuing a set of tactics founded more on maneuver than attrition.

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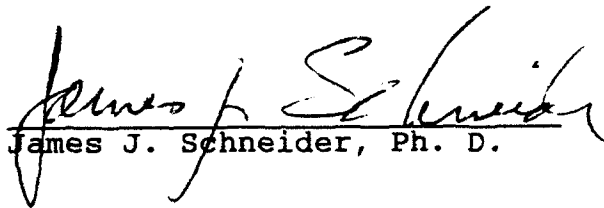
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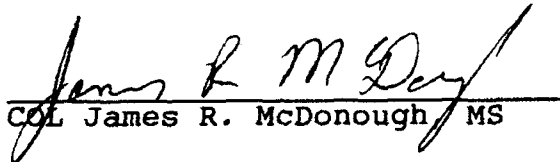
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General Schwarzkopf was unhappy with the tempo of the VII Corps attack during Operation Desert Storm. Likewise, a recent Rand study of over 115 NTC battles highlighted the technique of overwatch as a significant detractor to sustaining tempo in the attack.

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I. INTRODUCTION

In the waning hours of Operation Desert Storm General H. Norman Schwarzkopf confronted a dilemma. The Chairman of the Joint Chiefs of Staff, General Colin Powell, was pressuring him to conclude hostilities as public opinion began to focus on the brutality of the highway of death. General Fred Franks' VII Corps, however, had not moved fast enough to secure a key piece of terrain near Safwan, Iraq. The VII Corps attack had bogged down, jeopardizing the successful conclusion of hostilities. General Schwarzkopf recalls:

> Its plan of maneuver seemed
> plodding and overly cautious:
> advance, stop, regroup, advance
> again, and so on ... I <did> not
> want a mechanical, grind it out
> operation.[1]

General Schwarzkopf should hardly have been surprised at the lumbering pace of the attack, though, as the U.S. Army doctrine of overwatch governed the tempo of the VII Corps attack.

Likewise, a 1987 Rand study of 17 National Training Center rotations identified a potential flaw in U.S. Army overwatch doctrine. The comprehensive study of over 117 battles speculated that the consistent failure of blue force attacks might be attributable to the process of overwatch as practiced in American doctrine:

> Our doctrine invokes the theme of advancing
> by bounds in the assault, with units
> providing overwatch for each other. Soviet
> doctrine for the attack ... does not embody
> the principle of overwatch. We see at the
> NTC that the OPFOR advances at a steady and
> usually rapid pace.[2]

Within the text of the Rand study are the telling statistics that of the rotations analyzed, red forces were successful 78% of the time, while blue forces succeeded in only 22% of the battles.[3]

The Rand study highlights tempo as a significant contributing factor to the outcome of the battles, and overwatch as a serious detractor to tempo. Taken together, the Rand study and General Schwarzkopf's observations reflect a growing schism between the U.S. Army capstone doctrine and its tactics, techniques, and procedures. As such, overwatch tactics merit further analysis to determine if a doctrinal shift is necessary to achieve and sustain higher tempo in the attack.

As background, the technique of "overwatch" is a relatively new concept in the art of war and almost uniquely American. From the era of pikes and bows to the rifles and short range artillery of the late nineteenth-century, military art consisted of mass movements without protection. Yet, once the industrial revolution expanded the range of all weapons, the tactics of fire and maneuver became a necessity for soldiers to survive on the battlefield while attempting

to gain ground. Likewise, the tactic of overwatch became a uniquely American application of firepower technology toward maneuver protection.

The purpose of this monograph is to analyze the process of fire and movement at the tactical level and determine if the technique of overwatch is prevents attacking mechanized forces from sustaining offensive tempo. Therefore, the monograph intends to answer the research question: is there a better technique than overwatch to achieve and maintain the tempo of an attack while simultaneously protecting the force?

The relevancy of this research is threefold. First, as Army doctrine writers instill in the American theory of war an offensive, decisive mind set, it is necessary to ensure that tactics make the necessary shift to support the strategic vision. An indicator that tactics have not kept pace with the American strategic vision is Schwarzkopf's charge against the U.S. VII Corps for conducting a "plodding attack". There appears to be a paradox between what the American political system desires, quick victories, and the military's tactics of overwatch.

Secondly, while U.S. Army doctrine advocates attacking enemy weaknesses and moving rapidly, the NTC results indicate that there is a disconnect between doctrine and practice. While the 1976 version of FM

100-5, where overwatch was formally introduced, advocated the active defense designed to defeat a Soviet attack in central Europe, the 1992 draft edition of FM 100-5 champions an offensive spirit. The *reason* for the disconnect is that the practice of overwatch is defensively oriented and is incompatible with the notion of moving fast and avoiding weakness. Thus, not only does overwatch not fulfill the strategic vision, it conflicts with the U.S. Army's capstone doctrine by inhibiting the ability of units to exploit enemy weaknesses and move quickly.

Third, FM 100-5 asserts that to comprehend fully the intricacies of battle synchronization,

> tactical leaders must understand the techniques of controlling and integrating fire, maneuver, and protection, coordinating direct and indirect fires, utilizing air and naval fires, and substituting massed fires for massed troops.[4]

As such, a careful study of overwatch as a tactic should increase understanding of battle dynamics and will lend insight into the future of mobile warfare. Likewise, this study will shed light on the direction the American Army should pursue regarding its maneuver doctrine and techniques.

The methodology to make the aforementioned determinations is patterned after the *School of Advanced Military Studies* theory model. This model begins with an individual filtering reality (history)

through his particular lens, after which he analyzes and develops theories, and finally creates and applies doctrine.

As such, the methodology will begin with a precise definition of the problem, then follow with a historical review of the German counterattack in the Ardennes. From the historical review and the Rand study, the monograph will develop a standard and alternative overwatch model. A discussion of attrition and maneuver warfare theories will then debate the relative merits of each model. Finally, a doctrinal analysis of theory and history will complete the review.

After framing the paradox in terms of a strategic vision favoring quick, decisive victories at odds with a defensively oriented tactic of overwatch, the German counteroffensive in the Ardennes will reveal how the Germans achieved and maintained tempo while protecting the force. The battle of the Ardennes is particularly relevant on two levels. First, the German generals conducting the Ardennes counteroffensive had all watched the Russians overwhelm their forces on the Eastern front.[5] Generalmajor Heinz Kokott, the commander of the 26 Infantry Division, was particularly impressed with how the Russians protected the momentum of their attack at Kursk. The Germans extrapolated

what they found useful from the Russians and applied it
to their clandestine attack in the Ardennes. Secondly,
the American defensive line in the Ardennes was
dispersed, similar to the forecasts in current American
manuals of the expanded battlefield. As such, the
Ardennes battle will lend insight into the application
of Russian doctrine to an expanded battlefield.

The two overwatch models will then reflect current
U.S. doctrine and an alternative design based upon the
combination of current Russian doctrine and Soviet
tactics as exercised by the Germans in the Ardennes.
The monograph will evaluate each model on a standard
set of seven criteria. The comparison will portray the
strengths and weaknesses of each method of achieving
tempo while protecting the attacking force.

The theory discussion will debate the merits of
attrition and maneuver theories as they relate to the
issues of tempo. Attrition theory being geared to
destruction by fire, maneuver theory is that which
pursues the defeat of an enemy by full integration of
fire and maneuver. The application of either theory
has differing ramifications for tempo in the attack.

A doctrinal analysis of history and theory will
then highlight the disparity in tempo sustainment
between U.S. and Russian doctrine. This process will
also glean the most suitable tenets from the two

doctrines to develop a foundation for future U.S. offensive tactics.

In the final analysis, this monograph will assert that the American concept of overwatch does not allow attacking units to achieve sufficient tempo. As such, it will address the fundamental weaknesses associated with the American practice of overwatch. Specifically, American overwatch doctrine lacks flexibility, fails to address the entire depth of the tactical battlefield, and leans toward static, defensive battle and piecemeal commitment of forces through a decelerating nature. Finally, this monograph will propose that the American Army adopt a more aggressive doctrine with regard to maneuver at the lowest levels and establish a forward detachment, along with concomitant tactics, in its force design at the higher tactical levels.

II. THE PROBLEM: PROTECTING THE FORCE AND MAINTAINING THE TEMPO

Later in the analysis section of the monograph, the details of American and Russian doctrine will be set forth. However, it is necessary to review the evolution of overwatch as a doctrinal technique to define the problem. In essence, General William E. DePuy as a battalion commander in World War II witnessed the need for protection of the maneuver force

during an attack. Because of the declining quality of his infantry toward the end of the war, he devised a primitive system of overwatch that stressed simplicity and protection at the expense of tempo. After the war, he began organizing and training his peacetime units to suppress the enemy from stationary positions while other units maneuvered onto the objective.

After the war, DePuy's assistant division commander, BG Hamilton Howze, worked with him to develop the process of "overwatch" as we know it today. Both Howze and DePuy puzzled over how best to protect the maneuver force as it assaulted an objective. "The difficulty was that a tank unit on the move could not return a high volume of accurate fire instantly, especially if engaged from a well-concealed position."[6] Howze and DePuy found that overwatch worked best when tanks suppressed enemy defenses from stationary positions. However, they did conceive of the notion of overwatch on the move as they "also used the term overwatch when describing how these units moved to contact or reacted to contact with the enemy."[7] Clearly, the founders of overwatch doctrine envisioned the eventual evolution of the practice commensurate with qualitative manpower or technological advances of mobility, accuracy, and observation.

Regrettably, the ossification of their crude

notion of overwatch doctrine has precluded developmental thought toward a new technique commensurate with the strategic vision and technological advances. Nonetheless, both Howze and DePuy saw *stationary* overwatch as a temporary measure to protect the maneuver force until such time as the army could better integrate fire and maneuver to achieve greater tempo.

It is important to note that DePuy and Howze focused on the linear advance of a specific small unit through fairly limited tactical depth. Their concept of protecting maneuver units dealt only with the immediate suppression of units directly in the path of the advancing friendly unit and as the units deployed for battle. They did not develop the concept of the complete integration of fire and maneuver, nor did they consider using the tactical depth of the battlefield to protect the maneuver unit. In fairness to DePuy and Howze, bounding overwatch has served the American Army well given its supreme technological advantage.

Therefore, the problem stems from the fact that while overwatch is sound doctrine, it may not be the best we can do; especially under conditions of modern, high-speed offensive operations. While overwatch supports the American style of attrition warfare, a future foe on the battlefield may be equally as capable

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in technology and better prepared doctrinally. Thus,
it serves us to research the origins of overwatch and
determine if we are doctrinally capable of achieving a
higher tempo while maintaining low casualties.

III. GERMAN "MANEUVER OF FIRE" IN THE ARDENNES--AN
OPERATION BEFORE ITS TIME.

Oddly, the German Army believed in December 1944
that the best technique for tactically defeating an
enemy was by moving fast and avoiding enemy weaknesses.
Matthew Cooper writes of the Ardennes Counteroffensive
in The German Army 1933-1945,

> there was to be a speedy exploitation of the
> attack towards objectives some 110 miles
> distant, avoiding enemy strongpoints and
> without undue concern about extended
> flanks.[8]

In essence, the Germans emphasized maneuver, coupled
with the right mix of fire, to achieve the necessary
tempo to overwhelm the enemy. Hence, the German
counteroffensive provides a good example for the study
of a high tempo attack across an extended battlefield.

In December of 1944, Allied forces sat dispersed
across an extended battlefield after a rapid advance
across Europe. Failing logistics, poor weather, and
stiffening German resistance ground the Allied advance
to a halt near the German border. As Allied forces
thinned their lines along the "ghost front", Hitler's

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Germany planned a surprise last attempt to regain lost ground in what would be called the Battle of the Bulge in the Ardennes.

Notably, the German leaders of the Ardennes invasion had served on the Eastern Front during the battle of Kursk and witnessed the effective Russian use of forward detachments, maneuver of fire systems, and artillery in the direct and indirect mode. In Generalmajor Kokott's account of the 26th Infantry Division's attack at the Ardennes, he notes that he task organized his units to achieve speed and mass.[9]

Specifically, he created two forward detachments, complete with tanks, infantry, artillery, and engineers, that were to bypass enemy strong points and fix or secure key positions throughout the tactical depth of the American position. Likewise, Kokott used a combination of infiltration, deep fires, maneuver, and rapid advance to penetrate enemy defenses and drive deep into the zone. This portion of the monograph will historically analyze Kokott's tactics of maneuver, his use of artillery, and commitment of forward detachments to protect his main body maneuver forces.

Kokott received new officers and equipment from the Eastern Front in the weeks preceding the Ardennes offensive. He recalls that "leaders and troops were once more trained for swift and mobile

methods of attack."[10] This training entailed methods
of defeating enemy tank defenses through rapid advances
that either bypass or overwhelm the enemy positions.

Kokott provides a lucid account (see Figure 1) of
the 77 Grenadier Regiment's hasty attack on an
unsuspected American position in the village of
Longvilly:

> The fire discharged by the batteries roared
> like one single powerful blow, and seconds
> later the impacts of the howitzers, heavy
> mortars and infantry weapons were bouncing
> into the target areas ... platoons of the
> Gren Companies advanced towards the village
> ... the tank group ... is driving up from the
> southwest, firing all its guns. Total
> confusion was prevailing amongst the enemy
> forces ... The surprise was a complete
> one.[11]

Kokott's account provides many lessons. First, he
speaks of target "areas" for the artillery, striking
the enemy throughout the depth of the zone, not on the
point of attack. Second, infantry weapons were used to
provide overwatch, but they had previously infiltrated
into the enemy defensive positions to create confusion
which provided greater protection to the maneuver
force. Third, tanks were firing on the move without
stabilized gun turrets or thermal sights. Last, and
most importantly, these effects combined to achieve
total surprise and complete victory for the German
forces. Clearly, maneuver and attrition were
thoroughly integrated into one synthesized, seamless

12.

action.   Further, Kokott's account is replete with

similar engagements.   In summary, the 77 Grenadier

Regiment used infiltration, direct fire, maneuver,

deception, and dispersed indirect fire to protect its

maneuver and achieve, in Kokott's words, "the fullest

force."[12]

While Kokott used his artillery in the traditional

sense to assist the penetration, he also saw benefit in

using artillery in direct fire modes.   Kokott task

organized his artillery into indirect fire units and an

antitank artillery battalion.[13]   The indirect fire

units focused on:

> all known and suspected points of resistance,
> all observation posts as well as fire and
> reserve positions ... <and> all roads, moving
> behind the breakthrough points hermetically
> towards both flanks and depth.[14]

Kokott used indirect fires throughout the tactical

depth of the battlefield as well as to reinforce the

penetration, or main effort.

Using artillery in the direct fire mode increased

the suppression of enemy positions and thereby enhanced

the protection of the maneuver force.   Further, Kokott

placed his "caterpillar tractor East-motorized battery

of the First Anti-tank battalion of Art Regt 26" in his

reconnaissance battalion to infiltrate deep and provide

long range suppressive indirect fires and close direct

fire suppression.[15]   Such an innovative task

organization served to protect directly the maneuver force as it penetrated enemy defensive lines as well as facilitate a higher tempo of the attack.

Infiltrating artillery deep with reconnaissance or forward detachment units extends the depth of the attack, thereby sustaining the tempo. Kokott's attacking units could count on indirect fire from their organic units, and, once they outraced the umbrella of protection, could rely on the infiltrated batteries for additional support. Extension of the indirect fire umbrella provided for sustainment of tempo in the attack by providing maneuver commande s the insurance that no matter how fast they moved, artillery would be available to support them.

Perhaps the single most significant alteration Kokott and the other commanders on the Ardennes front made was the creation of forward detachments. Having watched the Russians at Kursk overwhelm German defenses with deep penetrating forward detachments, Kokott decided to apply the same principle in the Ardennes. The forward detachments facilitated maneuver by bypassing enemy strong points while moving to secure river crossing sites or key road intersections for the uninterrupted maneuver of the main effort. Where necessary, the battalion-size forward detachments also breached obstacles. Kokott, thus, used maneuver and

maneuver of significant firepower to protect and facilitate the tempo of the main effort. In essence, the forward detachment fully integrated fire and maneuver to provide for the tempo of the attack.

In this brief synopsis of Kokott's tactics and task organization, based on the Russian counterattack at Kursk, it is evident that the German forces exploited an extended battlefield through maneuver. Using tight formations, infiltrated overwatch, suppressive fires from tanks and artillery pieces on the move, and forward detachments, Kokott repeatedly achieved his objectives. Eventually, the German attack became untenable for material and manpower reasons. However, Kokott demonstrated the utility of applying the Russian doctrine of maneuver to an extended battlefield.

The historical lessons gleaned from Kokott's division will provide the framework, along with other contributing research, for an alternative overwatch model. Likewise, the Howze and DePuy model will represent the standard overwatch technique as the American Army applies it today.

IV. MODELS OF OVERWATCH

Soon after Kokott's attack and the eventual defeat of the German Army, Howze and DePuy developed their

concept of protecting maneuver during the attack.
Their style contrasts sharply with Kokott's and this
portion of the monograph will compare the standard
overwatch model as developed by Howze and DePuy and
espoused by the final draft of Field Manual 71-123,
with an alternative overwatch model as performed by
Kokott's division and described by Lieutenant General
William Crouch and Colonel Thomas Morley. Crouch and
Morley expressed their views for a doctrinal shift
toward a higher battle tempo in a 1989 Military Review
Article titled, "Failed Attacks and Flawed Overwatch:
A Lack of Mass and Speed in the Offense." Evaluation
criteria for the two models will consist of: tempo
(speed), mass on the objective, use of direct fire,
ability to observe and acquire targets, use of
maneuver, use of indirect fire, and projected casualty
rates.

A. The standard supporting fires, or overwatch,
model (Figure 2) as practiced by the American Army and
discussed in Field Manual 71-123 is a combination of
direct fires placed at the point of attack from a
stationary support-by-fire position, and indirect fires
also concentrated at the "critical time and place," and
maneuver by bounds.[16] Figure 2 demonstrates a
company/team conducting a support-by-fire mission from
a stationary position, while the remainder of the task

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force conducts bounding overwatch to the objective. FM
71-123 reads:

> The overwatch or support-by-fire mission is
> given to a company/team as part of the larger
> TF maneuver. The support force's
> responsibility is to fix the enemy so that he
> can be struck by the maneuver force.[17]

Assuming the task force has four companies for its
attack, already 25% of the force has been dedicated to
a support mission and taken away from the assault.
Since the doctrine of overwatch applies to all
organizational levels, the best case assumption is that
25% of each unit will be positioned to support the
assault. With losses factored into the mathematics of
the attack, less than 25% of the task force can be
counted upon to assault onto the objective. Also, it
is this separation and reduction of force that
segregates fire from maneuver with a resultant loss in
tempo.

What Figure 2 portrays is the synthesis of battle
results extracted from over 181 NTC and force on force
MILES battles as well as countless Army Training and
Battle Simulations.[18] Crouch and Morley summarize
the problem with American overwatch doctrine when they
write:

> Attacking forces have been continually
> reduced to increase overwatching forces.
> Battalions, companies and even platoons
> designate overwatch elements during the
> course of an attack ... Thus a piecemeal
> attack is created, reducing mass and

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critically slowing the tempo of the attack.
The defender seizes control of the battle,
repositioning and reinforcing at will.[19]

What Crouch and Morley identify is that American

doctrine detaches maneuver from attrition, creating the

piecemeal attack. In essence, then, the standard

overwatch model would rate on the criteria scale (5 as

best, 0 as worst) as follows:

CRITERIA   SCORE

Direct Fire: 4 (Good suppression from
stationary positions, but subject to enemy indirect
fire)
Indirect Fire: 3 (Doctrinal application is to
place artillery at point of attack, thereby freeing
other enemy units to reposition and predict point of
penetration)
Tempo (Speed):   1 (Attack grinds to a halt with no
positive acceleration--see Figure 3)
Observation: 5 (Stationary overwatch position
can pin point enemy positions more easily than if on
the move)
Maneuver: 1 (All maneuver is focused at the
point of penetration, making the attack predictable and
easy to counterattack)
Casualties: 3 (Extreme caution usually
generates low initial casualties, but as the attack
slows, casualties exponentially increase with inverse
proportion to its speed--see Figure 4)
Mass on Objective   1 (Main effort depleted of mass)

Predictably, the standard overwatch model scores

high in the application of firepower, reflecting the

traditional American reliance on technological

advantage to defeat an enemy. However, it scores low

in the less concrete, more doctrinal, categories of

tempo, maneuver, and mass. In essence, because of the

American orientation on firepower, overwatch focuses on

destroying the enemy instead of suppressing the enemy

to facilitate maneuver.

B. The Alternative Overwatch Model (AOM), found
at Figure 5, is based upon Kokott's tactical success in
the Ardennes and Crouch and Morley's description of a
successful attack.[20] The AOM exploits the full
potential of technological and doctrinal possibilities
to attack the enemy throughout the depth of his sector.
This model advocates Kokott's infiltration of
overwatch systems (anti-tank and automatic weapons),
tight, versatile formations for the maneuver unit,
constant maneuver for the supporting unit, and striking
the depth of the enemy sector with both maneuver and
firepower.

Likewise, Crouch and Morley describe the AOM
attack as follows: First, one or two sections of
proven "killer" tanks moving toward the objective using
stabilized gun turrets to acquire and destroy enemy
positions. Two to four tanks could overwatch the
entire task force while not depleting the mass of the
attack. This small moving section would be less
vulnerable to enemy artillery while sacrificing little
in the way of accuracy.

Second, tight columns of tanks and fighting
vehicles achieve an amount of protection by moving
rapidly. Their momentum would create shock effect and
the necessary mass to overwhelm enemy weapon systems.

Third, artillery striking both the penetration point and deep in the sector would freeze enemy reserves and not tip off the location of the main effort. Fourth, a forward detachment consisting of attack helicopters, tanks, and Bradleys attacking independently before the main effort would serve as a form of overwatch by forcing commitment of the reserve and diverting enemy resources from the main effort.

Such an attack might rate as follows:

CRITERIA   SCORE

Direct Fire   4   (No loss in accuracy of direct fires with stabilized gun turrets and thermal sights)
Indirect Fire   4   (Greater depth of tactical fight by isolating deep units able to reposition and by having artillery penetrate with a forward detachment to be used in either direct or indirect fire mode)
Tempo (Speed)   4   (Much greater tempo as easily controlled tight formations achieve positive acceleration and momentum as they strike the enemy defenses)
Observation   4   (Minor degradation in observation as tank commanders have to observe and direct drivers)
Maneuver   5   (Use of mobile overwatch force and forward detachment confuses enemy and provides no stationary target, negating preplanned artillery effect)
Casualties: 4   (Perhaps slightly higher at first if observation suffers, but casualties decrease dramatically once the attack achieves momentum--see Figure 4)
Mass on Objective 4   (Bulk of force on the objective)

While the AOM scores 29 of 35 possible points, the SOM rates 18 out of 35. These ratings are subjectively based upon interpretation of over 130 NTC battle results. The key differences between the two models are:

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1. The SOM advocates subtracting the overwatch from the attacking force during the attack through support-by-fire positions and bounding overwatch. The AOM infiltrates overwatch systems before the attack and uses a tank plat·:on or section to overwatch on the move.

2. The SOM employs indirect fire at the single point of attack. The AOM uses artillery in the indirect and direct fire modes throughout the depth of the sector.

3. The SOM attacks in linear fashion against a decisive point. The AOM uses tactically deep maneuver with a forward detachment and rapidly bypasses enemy strongpoints.

These distinctions highlight the cumulative difference between the two models. Essentially, the standard method separates fire from maneuver, while the alternative method integrates the two to sustain tempo.

V. ATTRITION VERSUS MANEUVER THEORY

Germane to a study of overwatch is the theoretical notion of the dialectic where a thesis and antithesis combine to create a synthesis. The continual battle between maneuver theorists and firepower (or attrition) theorists reigns supreme in a study of overwatch. Yet, S.L.A. Marshall writes that,

> we will be well advised to cease talking
> "fire and movement" as if the latter were

separate and apart from the former in tactical fact, and there did not exist an automatic and unbreakable connection between them.[21]

In the American Army, overwatch connects, but prevents the integration of, fire and maneuver. If fire is the "thesis" then maneuver would be its "antithesis", and protection of the maneuver force, or overwatch, would be the American synthesis of the two concepts.

The importance of the dialectic is that it accounts for the evolution of tactics. It symbolizes the notion of continual evolution; that is, that change has occurred in the past and that change will necessarily occur in the future. This quasi-predictive quality of the dialectic provides a suitable framework for an analysis of the interplay between fire and maneuver and how overwatch affects tempo. Overwatch arose from a need to protect the maneuver force and an alternative method may be called for to sustain the tempo in modern battle.

As the phrase connotes, the process of fire and movement is about attrition and maneuver at the tactical level. There are several schools of thought regarding the theories of attrition and maneuver at the strategic and tactical levels. These theories are useful to the student of overwatch in that they reveal the utility of pursuing a particular strategy or tactic in a given instance.

Hans Delbruck, Charles Willoughby and Richard
Simpkin represent the mainstream theories regarding
maneuver and attrition warfare. While these theorists
speak mostly in the strategic realm, it is possible to
follow their logic flow from the strategic level,
through the operational level, and down to the tactical
level of fire and maneuver. All three reach the
conclusion that the tempo of the battle, campaign, or
strategy is faster when using maneuver constructs. As
such, a brief review of the three theories will provide
insight into how attrition and maneuver theories relate
to tempo.

Delbruck was the first to clearly articulate that
strategy consisted of either annihilation or
exhaustion.[22] He further described his model by
asserting that annihilation "has only one pole, the
battle, whereas the <strategy of exhaustion> has two
poles, battle and maneuver."[23] Delbruck argued that
the commander's decision cycle oscillated between
choosing to fight or to move. Because in Delbruck's
age battle meant to cease movement and engage in
pitched struggle, we can interpret in a modern sense
his "battle" to be the parallel of attrition, or fire.
Thus, the choice was one of attriting the enemy or
moving as a unit, but doing neither simultaneously.

Delbruck's theory suggests that tempo is a

function of time consuming, large-scale preparation of the objective, followed or preceded by independent maneuver. For example, the stalemated trench warfare conditions of World War I are a prime example of the separation of attrition from maneuver. Essentially what results is heavy attrition, or fires, and little maneuver. In such a case, the forces are protected in the sense that the enemy has been attrited, yet the movement to the objective is still unguarded. The Delbruck model shows attrition and maneuver as separate entities, and suggests that, when fire and maneuver separate, tempo suffers enormously.

Immediately preceding World War II, technology provided a means of enmeshing the two concepts of fire and maneuver. Willoughby provides insight into attrition and maneuver theories in the last moments before the war where, for the first time, fire and maneuver combined to create an elevated tempo for the attack. He identifies two schools of thought. First, the French school, he claims, "divides battle into two acts: a period of preparation ... to wear out the enemy; then an act of force due to the intervention of fresh troops."[24] This theory describes the system of overwatch in its most primitive form--large scale attrition, followed by maneuver onto the objective.

Willoughby identifies a second theory as "the

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aggregate of a series of separate combats, the sum of which produce success."[25] While vague, his description of the German method of attack argues that the second form of attack includes a preconceived maneuver plan that is augmented by fires.[26] Clearly, in the attrit, then move model, the detachment of fires from maneuver inhibits the tempo of an attack. The second model seems to integrate more fully the notion of achieving, then protecting tempo to defeat the enemy. Importantly, it asserts that the successful integration of fire and maneuver create and sustain tempo.

To Simpkin, attrition theory takes into account the available personnel and material resources of a combatant entity and measures the sustainment or loss of those resources in relation to the opposing side. The winner of an attrition type battle is the force that has inflicted the most losses upon his enemy. Simpkin writes, "attrition theory is about fighting and primarily about casualties."[27]

In physics terms, attrition theory measures mass in relation to time in a two dimensional model as Figure 7 illustrates.[28] What this chart demonstrates is that armies may achieve victory by inflicting more casualties upon the enemy than the enemy inflicts upon them. To carry the theory from the strategic to the

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tactical level, attrition becomes the business of
reducing the enemy. It is primarily a static theory,
presupposing that maneuver may not occur until
sufficient reduction of enemy forces has been achieved.
Those who favor attrition search for the best method
with which to inflict maximum casualties upon the enemy
while protecting friendly troops.

If, to Simpkin, attrition theory is about creating
enemy casualties, then maneuver theory, as attrition's
antithesis, must be about avoiding friendly casualties.
In part, this is true; however, Simpkin's definition of
maneuver theory "regards fighting as only one way of
applying military force to the attainment of a
politico-military aim."[29] At the strategic level,
maneuver theory espouses the employment of all elements
of power to achieve the desired end. Yet, at the
tactical level, we may translate maneuver theory as a
three-dimensional model of mass, time, and space, where
attrition, or firepower, is not the primary means to
achieve victory.[30] To Simpkin, maneuver theory seeks
means other than firepower, primarily tempo, with which
to protect the force and secure the objective.

All theorists, however, deserve to recall
Marshall's point that fire and maneuver are
inextricably linked. What Delbruck, Willoughby, and
Simpkin highlight is that fire and maneuver, when

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separated, cannot achieve any tempo--the attack lumbers as the maneuver force awaits the attrition of the enemy. Fire without maneuver rarely achieves any significant objectives, while maneuver without fire generally fails with high friendly casualties.

Kokott's attack, and the alternative overwatch model, both stress the integration of fire and maneuver to achieve tempo. Figure 8 shows that proper integration of fire and maneuver more readily sustain tempo than the iterative process of overwatch that detaches attrition from maneuver. While overwatch is the foundation of fire and maneuver aimed at protecting the maneuver force through suppression of enemy defenses during the attack, the American practice of overwatch stresses the separation of fire from maneuver. That is, American doctrine tasks different units to perform the two tasks independently.

VI. Physics of the Attack

In the preceding theory discussion, the monograph employed such physics terms as force and pressure. Inasmuch as military planning is an art form, scientific methods also help to explain the dynamics of the battlefield. Physics help to explain the dynamics between mass and acceleration in the attack. Two equations in particular describe the attack (Figure 9):

Force = Mass x Acceleration. This is a standard physics equation which demonstrates that the amount of force an element can bring to bear is a function of its mass and increase, or decrease, in speed over time (acceleration).

Pressure = Force / Area. This is an equation from fluid mechanics which articulates that pressure is a function of mass, acceleration, and the area. B. H. Liddell Hart invokes the pressure equation best in his description of his expanding torrent theory. He advocates the utility of bypassing strong points in an indirect fashion, moving rapidly into the rear of an enemy. As the attacking forces "flow" past the enemy, as opposed to boring through them, the pressure applied to the area "deprives the enemy of his freedom of action."[31] Thus, applying greater pressure throughout the depth of the area negates the enemy's ability to reposition and react.

From a physics standpoint, the alternative overwatch model exploits the Force = Mass x Acceleration equation. However, the standard overwatch model, by separating maneuver from attrition, would be halved. That is, Force = Mass x Acceleration / 2. Because the American overwatch process is iterative, it negates its acceleration and halves its "force" every time it stops to provide cover for the next bound.

Thus, physics imply that doctrine should pursue the fullest possible integration of the overwatching force into the maneuver force to eliminate the attrition and maneuver disconnect.

For example, in the standard overwatch model, as units stop to overwatch from stationary positions they leave the "mass" of the attacking force. Thus, mass decreases throughout the attack. Secondly, doctrine mandates that one unit always be stopped, overwatching. Figure 3 illustrates how the attacking unit as a whole achieves some acceleration, then halves it by stopping to overwatch.

Because U. S. Army doctrine dictates that the overwatching units not initiate the next bound until the moving unit stops to overwatch, there will be a series of moments in the attack when no units are moving. Hence, while speed may average out to a meager two to three miles per hour, the attack has zero acceleration. Therefore, if there is no acceleration, the $F = Ma$ equation also becomes null. This is precisely the dynamic that the Rand Study highlighted in its review of over 117 NTC battles. Conversely, with the AOM, mass remains intact and positive acceleration occurs, thereby bringing greater force to bear on the enemy throughout the depths of his deployment.

Similarly, the standard overwatch model does not
fare well under a more fluid physics analysis where
Pressure = Force / Area. We observe pressure as a
desirable goal where the defending enemy is overwhelmed
by the thorough synchronization (force) of fire (mass)
and maneuver (acceleration) throughout the depth of the
tactical battlefield (Area).

Intuitively, as the force dissipates through
reduction of mass and level acceleration, pressure
decreases, allowing the enemy freedom of maneuver.
Conversely, with the alternative overwatch model, as in
Kokott's attack, force increases, thereby elevating the
amount of pressure on the enemy. Thus, increased
maneuver and mobility of firepower elevate the force
and pressure applied to the enemy, negating the
inherent advantage of the defense and the defender's
ability to reposition to parry the attacker's blows.

VII. ANALYSIS (FM 71-123 v. *Taktika*)

The historical perspective of Kokott's attack
demonstrated the realization of the smooth integration
of fire and maneuver to sustain the tempo of an attack.
Likewise, his use of maneuver and mass increased the
force he could apply against the enemy. Similarly, his
use of direct fire artillery, forward detachments, and
relentless maneuver throughout the enemy sector (area)

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created an inhibiting pressure on the defending Allied forces that allowed a weaker force to tactically defeat a superior defending force.

Likewise, current Russian doctrine is an extension of its precepts developed at Kursk and employed by the Kokott in the Ardennes. It seizes upon advanced technology and doctrinal possibilities to facilitate maneuver. The Russians in their most recent tactics manual give extensive thought to the process of fire and maneuver, whereas FM 71-123 barters for the status quo in offensive tactics. This portion of the monograph will analyze the Ardennes historical example and previous theoretical discussions in the context of current American and Russian maneuver tactics.

The American way of war is shaped by the insular position of the nation and the massive industrial base available to supply a conflict. Historically, American armies have relied on a technological advantage to overcome tactical weakness by throwing their strength against the enemy strengths.[32] Where the Germans bypassed enemy strong points to facilitate maneuver, the Americans prefer to pour firepower onto an objective in order to pass through it. In essence, American Armies are tied to the technology of their weapons systems. For example, Colonel James McDonough writes in his book <u>Platoon Leader</u>, "The overwhelming

advantage of firepower and mobility available to U.S. forces in Vietnam was impressive. We could concentrate power on any enemy ..."[33] Other conflicts are no exception, and what this availability of technology breeds in the American Army is an over-reliance on destruction and a natural proclivity to seek and attrit the enemy instead of maneuver for advantage.

"Move Fast, Strike Hard, and Finish Rapidly," an Airland Battle imperative from the 1986 version of 100-5, Operations, includes the narrative description:

> Speed has always been important in combat operations, but it will be even more important on the next battlefield because of the increasing ... lethality of conventional, nuclear, and chemical fires.[34]

While FM 100-5 clearly articulates the importance of tempo, FM 71-123 instructs units to support by fire from stationary positions, and encourages the cautionary bounding overwatch.

Likewise, the FM 71-123 concept of overwatch lacks planning throughout the depth of the sector. For example, at the brigade level the manual speaks strictly in terms of supporting with direct fires at the point of attack and indirect fires "where he needs it most."[35] Such a linear approach to the attack ignores the utility of Kokott's tactics of striking the enemy simultaneously throughout the depth of his sector at various weakpoints, and reinforces the separation of

fire from maneuver.

History reveals that in Kokott's example, we saw how units of infiltrated infantry, artillery and antitank weapons could suppress the enemy to protect the maneuver force. The fundamentals of the overwatch as depicted in FM 71-123 are to fix the enemy from stationary positions and suppress his weapons without closing onto his positions. Further, the support-by-fire position subtracts combat power from the attacking element and slows its progress by stopping to overwatch. By infiltrating an overwatch element, as the Russians and Germans advocate, the maneuver element is free to make an aggressive assault; thereby integrating fire and maneuver and increasing offensive tempo.

Opposite of the American view, the Russian way of war is shaped by the abutment of aggressive nations against its borders and wide steppes that favor unimpeded maneuver. Likewise, the 1987 Soviet Union Tactics (Taktika) manual emphasizes that evolving technology allows attacking forces to increase surprise, speed, and destruction through a new concept called "maneuver of fire".[36] The fact that the Russian Army maintains a strictly theoretical manual such as Tactics is indicative of the level of emphasis that the Russians place on understanding the tactical

level of war. Russian tactics, in contrast to American techniques, support maneuvering against enemy weaknesses, using firepower as a supplement to maneuver. In order to fully integrate fire and maneuver and achieve elevated offensive tempo, Tactics stresses the three critical factors of surprise, speed and maneuver of fire.

The Russians achieve surprise in the attack by using fires and maneuver to deceive the enemy. "Combat experience teaches us that the art of concealing the moment the attack begins is the principle factor of its success."[37] Disguising the initiation of the attack allows the forces to achieve necessary acceleration to sustain tempo. The primary diversionary techniques the Russians use include switching of artillery fire in the zone, infiltration, and deep attacks by forward detachments along an alternate axis of advance.[38] The combination of maneuver (infiltration and deep maneuver) and fires (inconsistent artillery preparation) confuses the enemy, allowing for the accumulation of acceleration prior to making contact.

Speed is the essential element of the Russian attack. Key to achieving speed is gaining momentum, which involves the mass of a force and its velocity. The very term "speed" implies a constancy that does not diminish throughout the course of the attack. Tactics

is replete with phrases imploring the attainment of speed and mass in the attack to the extent that a concept such as overwatch from a stationary position would be anathema to their doctrine. Infantry companies are directed to fight "without dismounting of the personnel."[39] Also, "subunits must know how to advance at maximum speed, to deploy quickly into combat (approach march) formation and swiftly attack the enemy."[40] Where American tactics stress caution and techniques such as bounding overwatch, Russian tactics overemphasize the need for integration of fire and maneuver in order to achieve and maintain tempo.

Even at the lowest tactical levels, the company and platoon, Russian doctrine implores units to fight on the move.

> In the attack ... the preferred method is to fire on the move, which provides immediate firepower without slowing the tempo of the advance.[41]

The emphasis here is on protecting the tempo at the individual tank and section level through a symbiotic blending of fire and maneuver. As the theoretical discussion revealed, it is at these low tactical levels where tempo is defined. Russian units, as did Kokott's in the Ardennes, avoid the slow, piecemeal attack by training to resist the urge to stop and return fire during the assault.

Likewise, firing on the move is a good example of

the recent Russian notion of "maneuver of fire".
Maneuver of fire is the rapid movement of fire systems
on the battlefield to a achieve a position of
advantage. As such, maneuver of fire is the Russian
descriptive phrase for fire and maneuver. Their
arrangement of the phrase is not accidental or loose
American translation, indeed, it is quite telling. To
the Russians, the attack is about maneuvering fire
systems on the battlefield to a position of advantage
to achieve a breakthrough and penetrate deep, isolating
the enemy. Tactics goes on to say, "Fast maneuver of
fire is an important principle of destruction by
fire."[42] Moving fires and fire systems, whether they
be tanks, attack helicopters, or long range artillery,
quickly reflects the Russian goal to more closely
integrate fires with maneuver to sustain tempo.

For example, Kokott's application of Russian
tactics provides a telling example of how to use
maneuver of fire to sustain tempo. Kokott had the 77
Grenadier Regiment infiltrate its infantry machine guns
and anti-tank weapons into the enemy lines, then used
artillery deep in sector to destroy enemy counterattack
capabilities. Likewise, the movement of artillery for
direct and indirect fire systems deep into the enemy
sector facilitated a high tempo of attack.

The essence of the maneuver of fire concept is the

Russian doctrinal use of the forward detachment. The
Russians, as did Kokott in the Ardennes, create forward
detachments to more fully integrate fire and maneuver
and exploit tempo. The forward detachment provides the
Russians the synthesis of well integrated fire systems
(tanks, fighting vehicles, attack helicopters, and
self-propelled artillery) with a doctrinal mission of
maneuvering throughout the enemy tactical depth.
Further, missions which the forward detachment normally
receive are those that facilitate the tempo of the main
body such as, securing bridges, fording sites, and key
road intersections.

Essentially, the forward detachment fully
integrates fire and maneuver with a sole aim of
sustaining offensive tempo. From a historical
perspective, because of the poor trafficability near
Longvilly, Kokott used forward detachments to secure
and protect critical road intersections.[43] The
unique task organization of his forces allowed the
forward detachments to maneuver deep while attriting
the enemy when necessary. Once in position, the
forward detachments provided for the uninteruppted
maneuver, or sustainment of tempo, of the attacking
forces.

From a physics perspective, introducing force with
a forward detachment in the tactical depth of the enemy

increases the pressure on the defending element. Also,
by creating a unit that fully integrates fire and
maneuver, the forward detachment is a subset of the
main effort's fire and maneuver integration process.
The result is exactly the opposite of overwatch where
fire and maneuver are stood apart by a sequential,
iterative process--fire and maneuver blend together to
achieve greater tempo in the attack, increase the
pressure on the enemy, and provide for a blow with the
maximum force.

Russian tactics heighten the importance of speed
and deception in the attack, pursue the notion of
maneuver of fire, and achieve true synthesis of fire
and maneuver through innovative force design. Where
the Russians advocate speed, the Americans barter for
caution and protection through fires. Where the
Russians argue for maneuver of fire, the Americans
prefer to seek the enemy and then use fires to destroy
it. Where the Russians use a forward detachment to
combine fire and maneuver, the Americans grapple with a
doctrine of overwatch that detaches fires from maneuver
and by design places tempo secondary to attrition.

VIII. SUMMARY AND CONCLUSIONS.
Howze and DePuy envisioned the concept of
suppressing the enemy from the move, yet they found

greater protection in overwatching from stationary positions. Operation Desert Storm and results from the National Training Center indicate that the American notion of overwatch is not capable of sustaining tempo in the attack. Further, as stabilized gun turrets, high performance engines, and thermal sights have increased lethality and mobility, the attack can now achieve a new level of tempo that seizes the initiative from the defender. In essence, overwatch serves to detach fires from maneuver, forcing their sequential application.

In contrast, Generalmajor Kokott borrowed Russian tactics to conduct his attack at the Ardennes. He used close formations of tanks, infiltrated weapons for overwatch, suppressed with tanks and direct fire artillery on the move, and deployed forward detachments to protect with maneuver. It was Kokott's deft movement of his fire systems that gained him rapid success against the Americans and a deep penetration; all the more remarkable for an infantry division. Kokott's attack displays how close integration of fire and maneuver sustain tempo in the attack.

Theory reveals that maneuver and firepower are inextricably linked. Attrition aims at inflicting, and accepting, losses, while maneuver is primarily geared toward finding positions of advantage and avoiding

casualties. Overwatch was developed out of the need to protect maneuver with fire, yet the American practice of bounding separates fire from maneuver, causing tempo to suffer.

As Appendix B reveals, technology, troops, and terrain impact on the process of overwatch and ultimately change the nature of tactics. Technology drives the army's capabilities, and therefore its doctrine. For example, where Howze and DePuy wanted to suppress from the move, technology limited them to overwatching from stationary positions.

Similarly, Marshall makes the point that men in isolation and under fire tend to freeze in combat. When transposed onto the doctrine of overwatch, this notion has even more serious consequences for the overwatching element in the attack. As units bound and overwatch, the overwatching element becomes dislocated from the main effort, receives fire, and conforms to Marshall's concept where the attack cannot continue without reintegration. Such a dynamic results in the complete separation of fires from maneuver. Ultimately, deceleration occurs, force and pressure diminish, and tempo deteriorates.

Likewise, while units must consider terrain when planning for the attack, it should not govern the type of formation. Rather, formations should conform to the

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level of control the commander wishes to possess
throughout the attack.

The current Russian notion of maneuver of fire is
an extension of their World War II doctrine where they
understood that close integration of fire and maneuver
sustains tempo. American doctrine does not exploit its
inherent technological advantage and reinforces
caution.

Finally, the technological revolution in precision
guided munitions, stabilized firing platforms, and
mobility of armor and artillery mandate an increase in
the tempo of the attack. As armies attack with greater
tempo, they must be able to protect and maintain that
tempo. As the alternative overwatch model suggests,
they can achieve this protection by tightening movement
formations, infiltrating overwatching systems,
suppressing from the march, using artillery in direct
and indirect fire modes, and committing forward
detachments deep into the tactical sector.

In essence, the U.S. Army can sustain tempo and
protect the force through a doctrine geared toward
continuous movement and application of fire.

APPENDIX A

DEFINITIONS.

The following definitions precisely define some of the terms essential to a discussion on overwatch and fire and movement.[44]

Overwatch: "A tactical technique in which one element is positioned to support the movement of another element with immediate *direct* fire."

Attrition: "The reduction in the effectiveness of a force caused by loss of personnel and materiel."

Bounding Overwatch: "A movement technique used when contact with enemy forces is expected. The unit moves by bounds. One element is *always* halted in position to overwatch another element while it moves."

Maneuver: "The movement of forces *supported* by *fire* to achieve a position of advantage from which to destroy or threaten destruction of the enemy."

Fire and Movement: "The simultaneous moving and firing by men and/or vehicles. This technique is primarily used during the assault of enemy positions."

Force = Mass x Acceleration: This equation illustrates the fundamental physics of the attack. The level of force required to achieve an objective is a function of the mass (or firepower), and its change in speed over time in reaching the objective.

Momentum = Mass x Velocity: This formula measures the rate of movement coupled with the amount of firepower (mass). The Momentum equation differs from the Force equation in that velocity is the speed (distance per unit time) at which the attack is constantly moving. There can be no such thing as negative speed, yet, deceleration results from a decrease in speed per unit time.

Pressure = Force / Area. This fluid mechanics formula may replicate the dynamics of the new, expanded battlefield. If a force can apply more pressure to a given area, it stands a better chance of protecting the tempo of its attack.

A THEORY OF EQUIPMENT, TROOPS, AND TERRAIN (THREE
FACTORS OF METT-T)

A. EQUIPMENT

Technology provides the tools for maneuver and
attrition. As the tools change, the process of
shooting and moving changes as well. If weapons shoot
more accurately and move faster, then it follows that
the tempo of future battles will increase. Thus, the
process of overwatch must change to keep up with the
resultant change in tempo.

Interestingly, technology has driven countries to
adopt either maneuver or attrition warfare as their
modus operandi for the conduct of battle. The
technology of precision guided munitions, stabilized
gun turrets, and anti-tank weapons has revolutionized
the process of fire and movement. Here it is necessary
to review another dialectic between technology and
tactics where technology most frequently created the
environment for change in the conduct of war. This
review will reveal the importance of recognizing
technological advances in relation to tempo, maneuver,
and attrition and making the necessary shifts in
tactics.

Before the notion of overwatch existed,
technological advances created the stalemated trench

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warfare conditions that permeated the First World War.
Essentially, long range artillery and rapid fire
weapons combined to make tactical defenses more
formidable, thereby making attacking forces more
vulnerable. Technology at the time favored attrition
warfare. Rapid transport, high volume direct and
indirect fire, and instantaneous communications raised
the firepower of soldiers and strengthened the tactical
defense.[45] As a result, commanders reverted to
trench warfare tactics for the protection of their
soldiers. Advances in technology, then, solidified the
tactical defensive as the stronger form of warfare in
the early twentieth century while there were no
commensurate advances in tactics to account for the
change. In essence, technology drove the World War I
armies to focus on the potential of firepower as
opposed to the limited forms of maneuver available at
the time.

As a result, some early twentieth-century armies
attempted to devise innovative tactics to counteract
the technological hardening of the defensive in World
War I. "The intentions of both sides to achieve
victory by attacks of large masses of infantry were
groundless under these conditions <of increased
firepower>."[46] Despite the best efforts of all sides
to make tactics the engine of change, it was another

technological advancement, mechanized armor forces, that signaled the first dialectical change in warfare since the early 1900s. With the advent of mechanized armor forces, the nature cf warfare took a decided shift to the tactical offensive as maneuver warfare seemed preeminent. "The process of motorization of troops had serious influence over military art."[47] Thus, a shift in technology created a shift in tactics prior to World War II.

Essentially, the mounted gun provided the attrition, or mass, while the gasoline engine provided the maneuver, or acceleration. The force achieved from the combination of mass and acceleration resulted in a certain tempo of battle. Units applied the force over a battlespace, or area. Successful application of force across an area achieved enough pressure to keep an enemy off balance so that he could not react to the penetration.

The German Army took stock of the evolution in technology and created a force structure and tactical doctrine best suited for achieving maximum force throughout the depth of an area. Armed with the tank, the Germans developed blitzkrieg tactics which overwhelmed French forces that were momentarily fixated on attrition warfare. The Germans placed armor, infantry, artillery, and engineer units together in

divisions and corps allowing them to conduct
independent operations. The combination of these
branches gave way to combined arms tactics where
commanders achieved a synergistic effect by coalescing
the strengths of each particular arm against the entire
depth of an opposing force. In essence, the Germans
applied mass and rapid acceleration across the tactical
battlefield, denying the enemy any freedom of action to
respond to the attack.

F. O. Miksche identified the increased
maneuverability of mechanized forces that led to a
dialectical shift in tactics from attrition to maneuver
when he wrote:

> Clearly surprise and speed are far more easy
> to obtain by means of the petrol motor on the
> roads and in the air than by means of railways and
> men marching. Railways, and roads to march on,
> permitted the massing of the great armies of
> 1914-18, but did not allow them to mass so rapidly
> or so unexpectedly for a manoeuvre as to give
> surprise and speed in the attack.[48]

By implication he identified surprise and speed as two
factors which protect the attacking force. Most
importantly, the Germans recognized the change in
technology and adapted their tactics to the means
available.

While the Germans were exploiting maneuver through
their application of new technology, the American Army
reacted to the advances by struggling with the mix
between firepower and maneuver in its own doctrine.

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DePuy's wartime experience impressed on him a need for suppression of the enemy in order to maneuver toward an objective. DePuy believed that the "new lethality of the battlefield, which resulted from a proliferation of accurate, long range, deadly weapons such as improved tank cannon and fire control instruments, ATGMs, and surface to air missiles,"[49] provided the means to protect the maneuver force in a better fashion. This new lethality convinced DePuy to increase the protection of a force through greater firepower, as opposed to force design and maneuver. His vision incorporated the need for overwhelming overwatching fires extracted from the body of the maneuver force.

Clearly, technology has forced change in tactics. It is important to note that where the American Army saw promise in the fire potential of new technology, the Soviet and German Armies found reassurance in its maneuver potential.

B. TROOPS.

Soldiers employ the technology in battle. The soldier's psyche and morale has tremendous effects on whether or not he employs the technology sufficiently. Indeed, doctrine may determine a soldier's mentality in battle and facilitate his contribution to the fight. For example, when a soldier leaves the mass of the

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attacking force to overwatch, he becomes dislocated from the body of the unit. When he receives fire, he becomes fixed to his position. According to Marshall, in all likelihood, that soldier or element will never rejoin the attack.

Likewise, high volumes of friendly fire and close proximity of fellow troops increase soldier confidence and security. Conversely, isolation on the battlefield and heavy enemy suppressive fires generate fear and paralysis. Soldiers acquire confidence and security from protective fires as they maneuver onto an objective. "Along the lines where the company commander takes over .. the increasing of fire volume must be considered primarily as a psychological matter."[50] In essence, Marshall asserts that firepower psychologically facilitates maneuver by reassuring the advancing soldier and can not stand alone as a source of defeating the enemy. To that extent fire and maneuver are inextricably linked in the mind of the soldier as well as the tactical planner.

The primary value of firepower, then, is as a unifying mechanism for the unit, not a means of defeating the enemy. Consider the Standard Overwatch Model in relation to Marshall's comment:

> Men going forward in line are in sight of one another. They therefore have sense of unity. But when they ... go to ground <and receive fire>, they no longer have knowledge of the

> position of the men on left and right.
> Before the company or group can again become
> a going concern ... it must reintegrate.[51]

Not only does "going to ground", the equivalent of the American overwatch practice, negate any moral advantage of the attack, it also slows the attack to the point where reintegration must occur before any progress can be achieved. There is sound psychological reasoning, then, for not stopping to overwatch and for keeping the units closer together. By maintaining greater unit cohesion, the attacking force achieves greater protection by advancing more rapidly and avoiding the inertia to stop.

C. TERRAIN.

Just as psychological factors determine the unity of an attacking unit, terrain often dictates the tempo of an attack. For example, dense terrain mandates slow speeds and close formations. It follows that open terrain favors high speeds and dispersed formations. The natural proclivity to expand a formation and use up the entire battlespace available, however, is a approach left over from the nuclear pentomic era when dispersion meant protection from nuclear destruction.

On the conventional mechanized battlefield, dispersion results in loss of control and loss of momentum. Commanders use tighter formations in close terrain to increase their control. It seems equally

reasonable to use tighter formations in open terrain to increase speed, flexibility, and protection. Thus, formations should not expand to fill the total available space. Rather, they should remain tight in order to increase the tempo of the battle through close control.

Earlier, Simpkin identified space, or terrain, as a component of maneuver theory. In a purely theoretical sense, attrition theory does not account for space and therefore does not assume terrain as a factor in battle. The argument between maneuver and firepower theorists is generally the opposite, that maneuver theorists attempt to explain away their concepts on the slate of a pool table, void of any geographical friction. As military planners translate theory into doctrine, maneuver theory is more applicable to the evolving battlefield simply because it accounts for the fact that to achieve victory, an army must close the space between itself and the enemy.

Likewise, TRADOC Pamphlet 525-5 speaks of the next battlefield as nonlinear and extended.[52] If future conflicts are to be fought in the environs of unlimited maneuver terrain, it is clear that simple application of firepower will not achieve the strategic end state. Rather, the extended, nonlinear battlefield of the future mandates that fire systems maneuver to seek

positions of advantage.

Second, it is axiomatic that changes in technology quite often necessitate changes in tactics. It would be wrong to acknowledge the exponential leaps in technology, yet barter for the status quo in tactics. Therefore, as the American Army is on the verge of both a strategic and technological change, it is necessary to review the most basic of tactics, the concept of overwatch, and make a determination if there is a better way to apply the technology available and meet the requirements of strategic and operational vision.

B. THEORY CONCLUSIONS

The preceding theory sections have discussed the impact of technology upon doctrinal change, and how men and terrain influence the tempo of the attack. Specifically, an attrition orientation predisposes commanders to seek the enemy and destroy its strength, whereas a maneuver bent advocates bypassing enemy strengths. As such, maneuver theory supports an elevated tempo in the attack. Also, technology has provided the tools for higher tempo so much that, if the attacker does not exploit the technology, the defender has a superior advantage in repositioning.

Further, a doctrine that, by design, separates soldier elements from the advancing forces to

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stationary positions, risks the permanent loss of those forces to enemy fire or psychological paralysis. Conversely, a doctrine that separates fewer elements during the attack would reinforce morale and the momentum of the attack. Likewise, the extended battlefield affords the commander greater opportunities to increase the tempo of an attack through uninterrupted maneuver.

As such, these theoretical constructs indicate that technology is mandating change. First, technology now affords an opportunity to achieve an elevated tempo of attack. Second, it may be necessary to abandon the old practice of overwatch if this new tempo is to be consistently achieved. Third, sustaining the tempo of the attack becomes a primary concern.
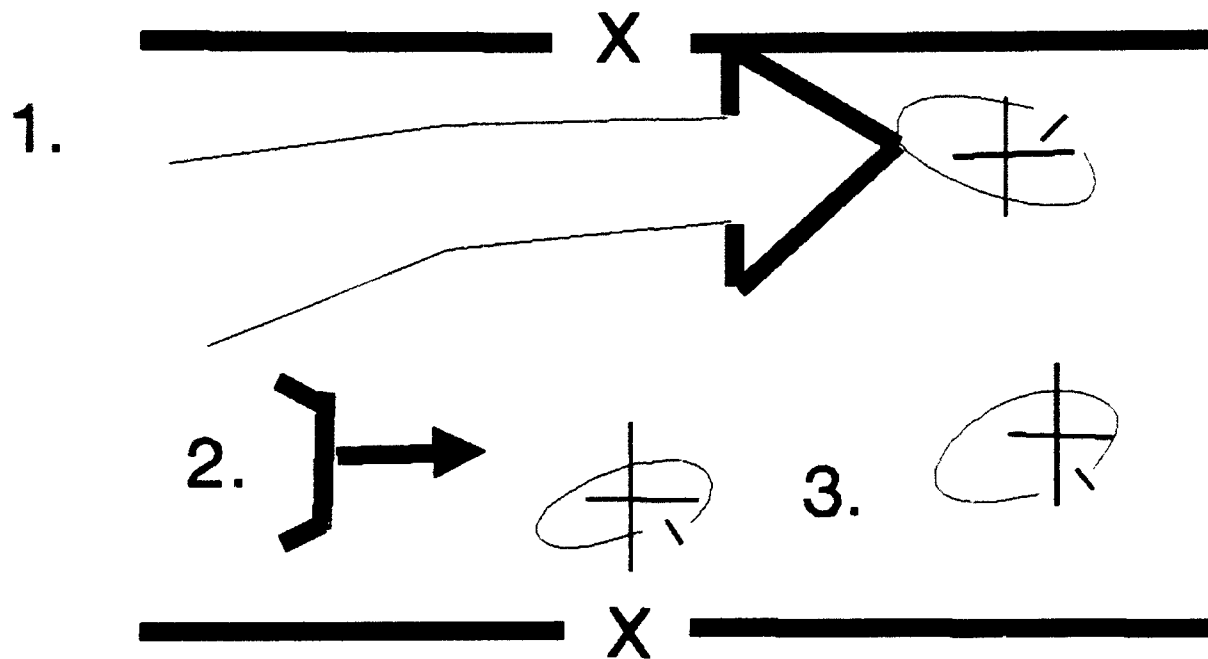
Appendix C
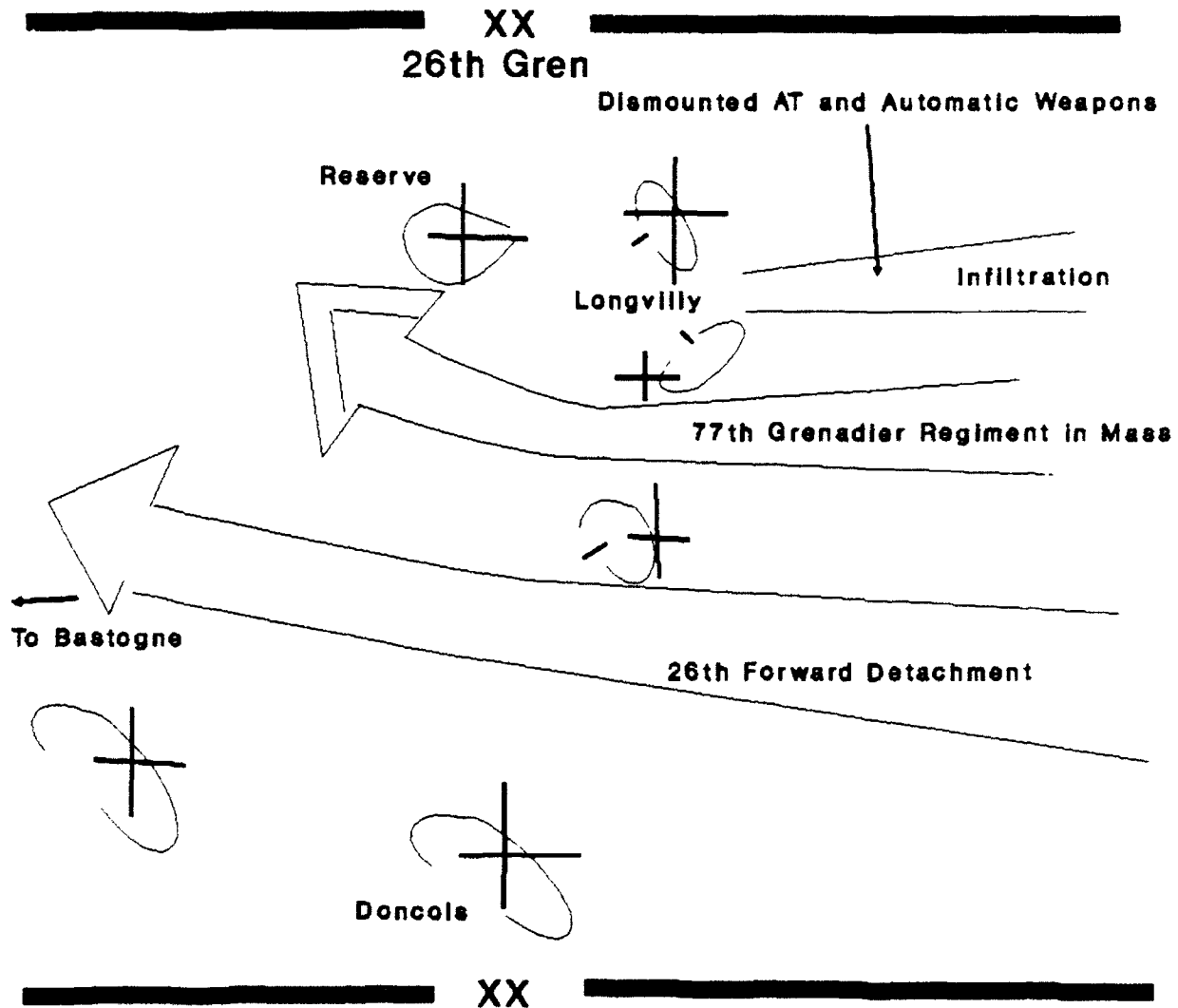
77th Gren Regt Attack on Longvilly

Figure 1

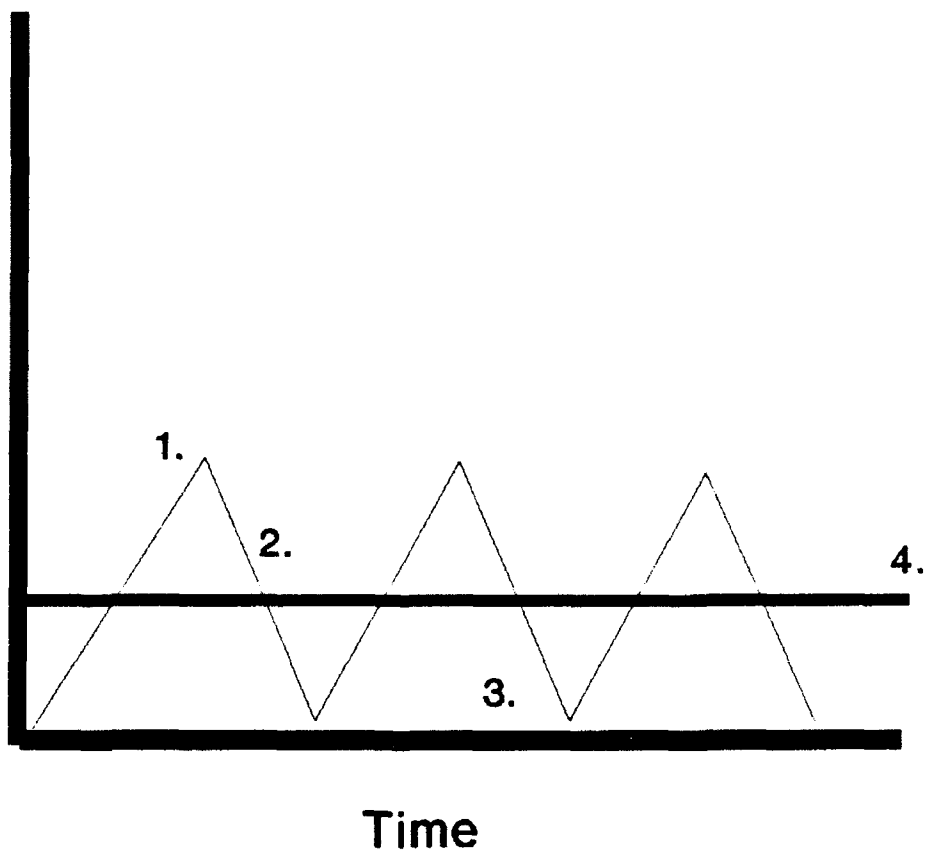# Standard Overwatch Model

1. Main effort starts/stops with bounding o/w

2. Overwatch from stationary positions

3. Artillery uses indirect mode only
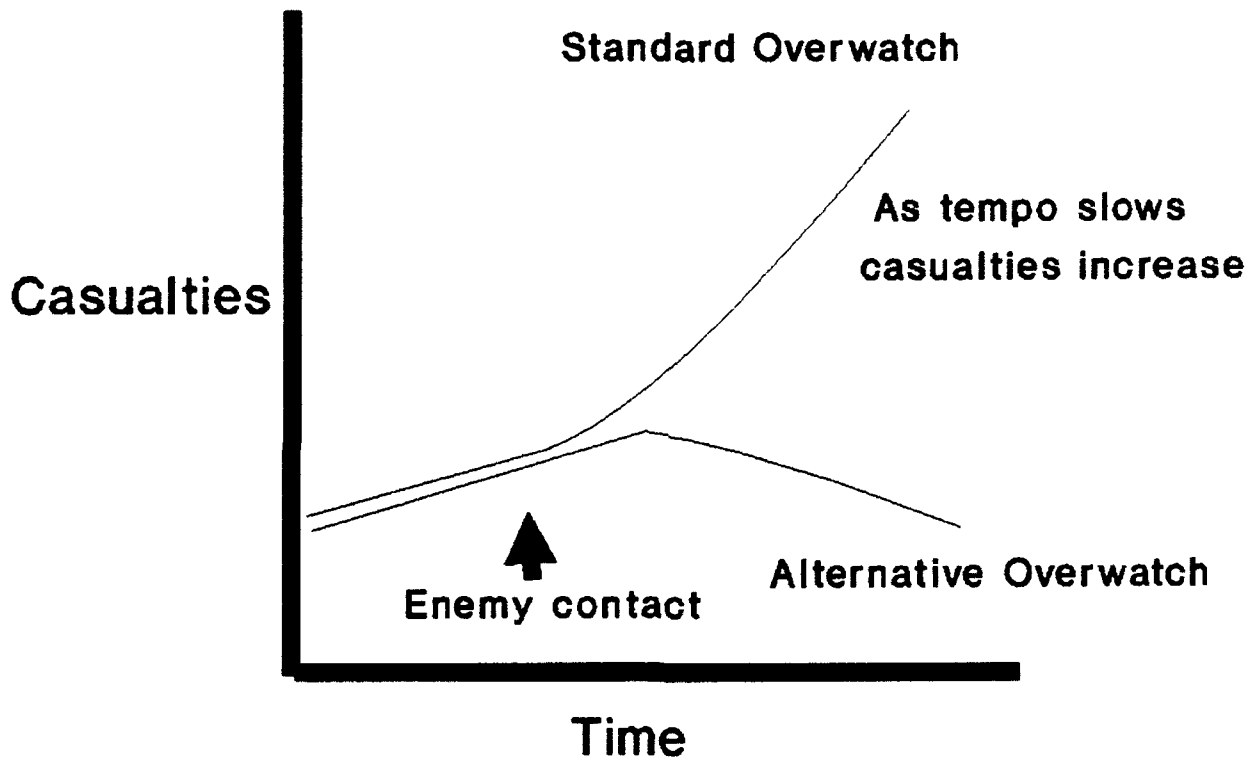
FIGURE 2

STANDARD OVERWATCH MODEL

Acceleration

Time

1. Acceleration increases as maneuver element moves

2. Unit decelerates as unit stops to overwatch bound

3. Net acceleration is zero with all units stopped

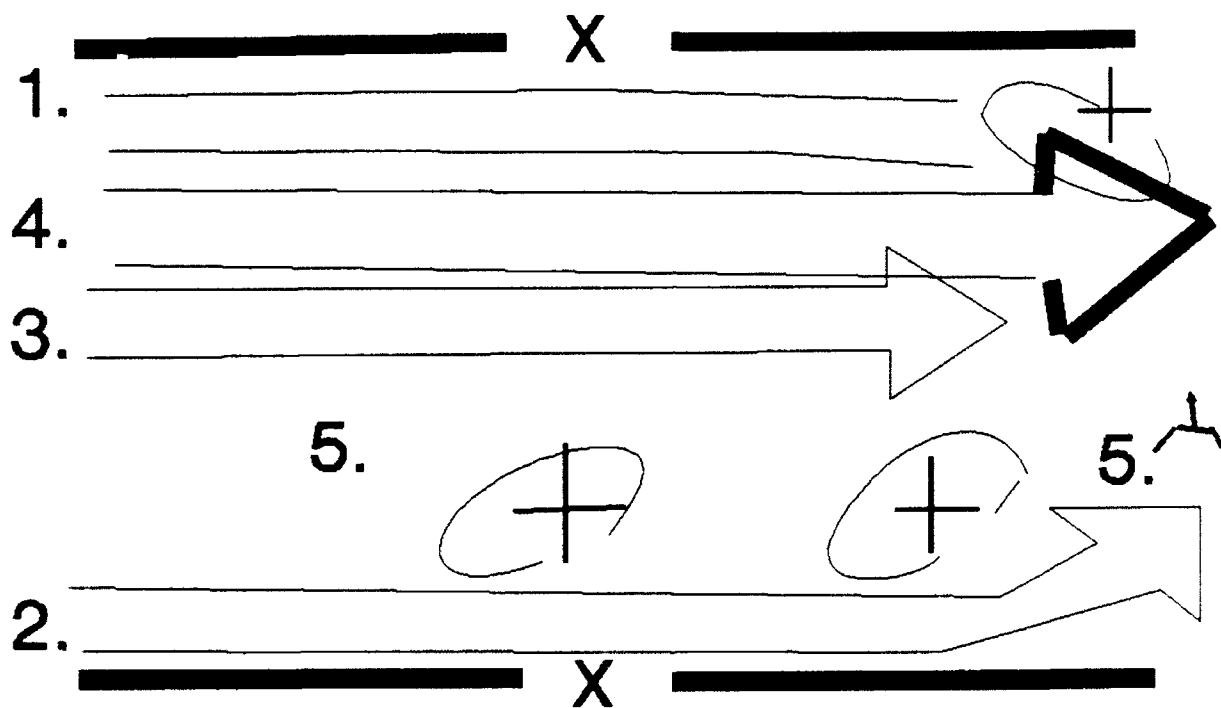4. Average speed is somewhere between max and min

Figure 3

Casualty Rates

Graphical depiction based on Red Force
and Blue Force rotations at the NTC
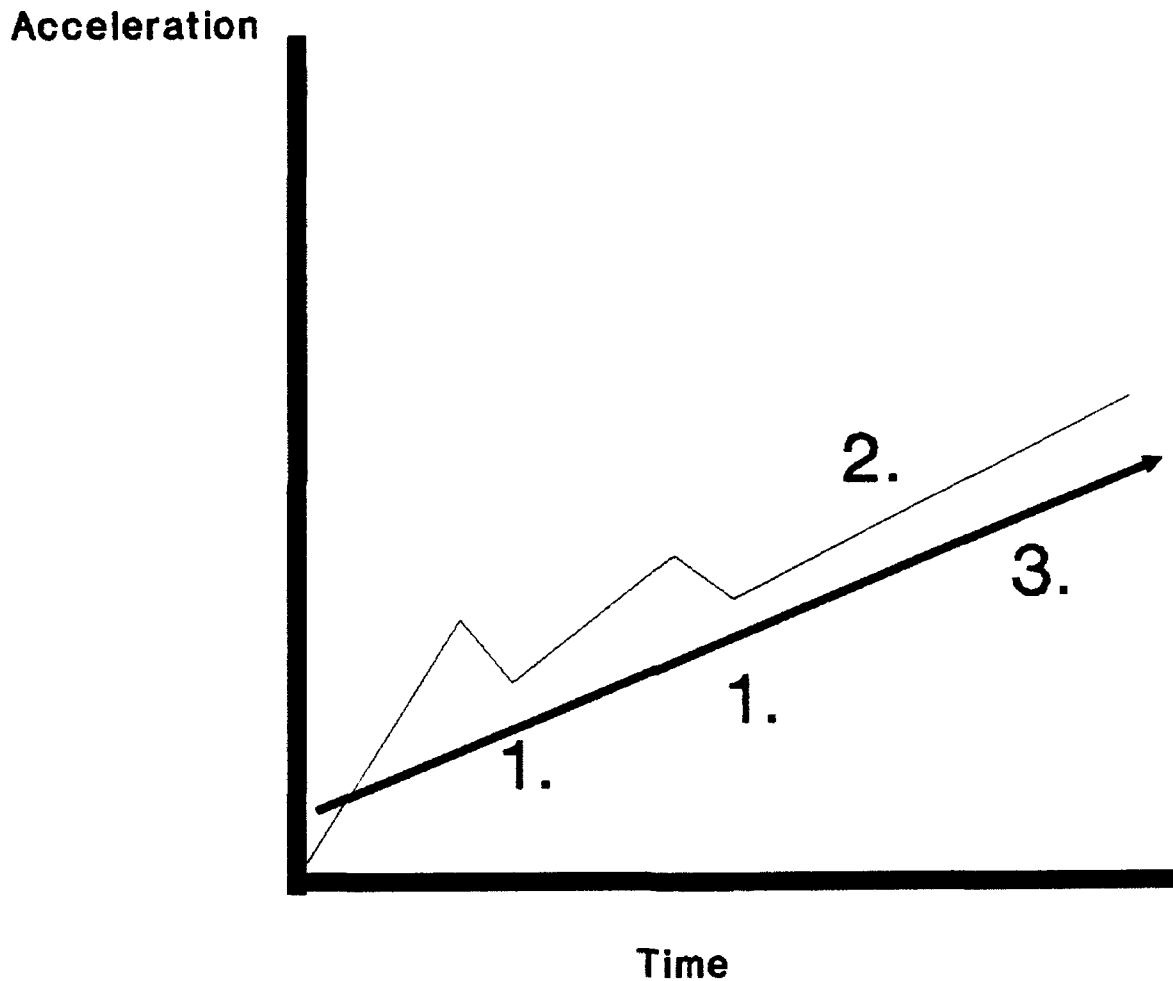from 1987 to 1989

Figure 4

Alternative Overwatch Model

1. Infiltration of AT systems for overwatch
2. Forward Detachment to maneuver deep
3. Tank platoon/section using stab to overwatch
4. Main effort achieves high tempo/no stopping
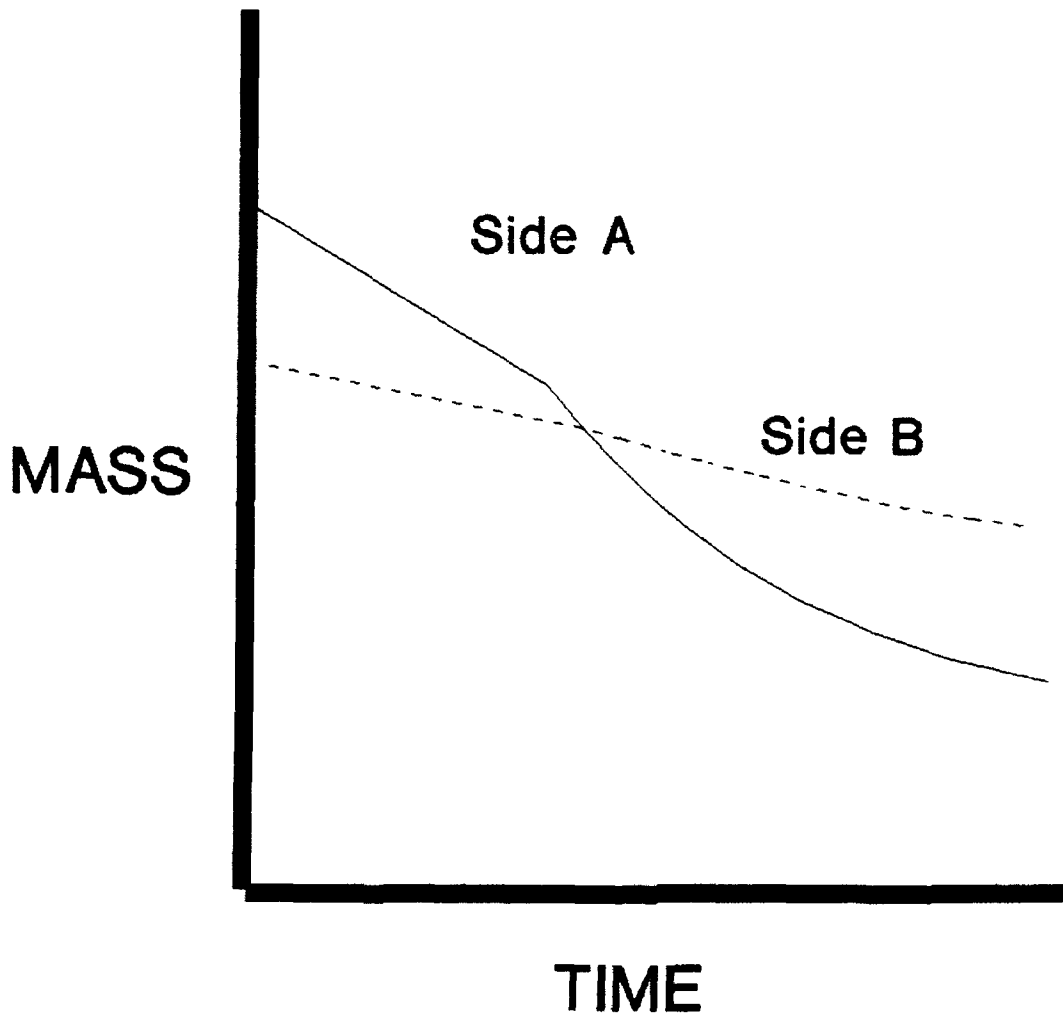5. Artillery in indirect and direct fire mode

FIGURE 5

Alternative Overwatch Model Acceleration

1. Enemy Contact
2. Integrated fire and maneuver create positive acceleration
3. As acceleration increases, so does tempo

Figure 6

Simpkin's 2-dimensional attrition theory model

Figure 7

Tempo Analysis

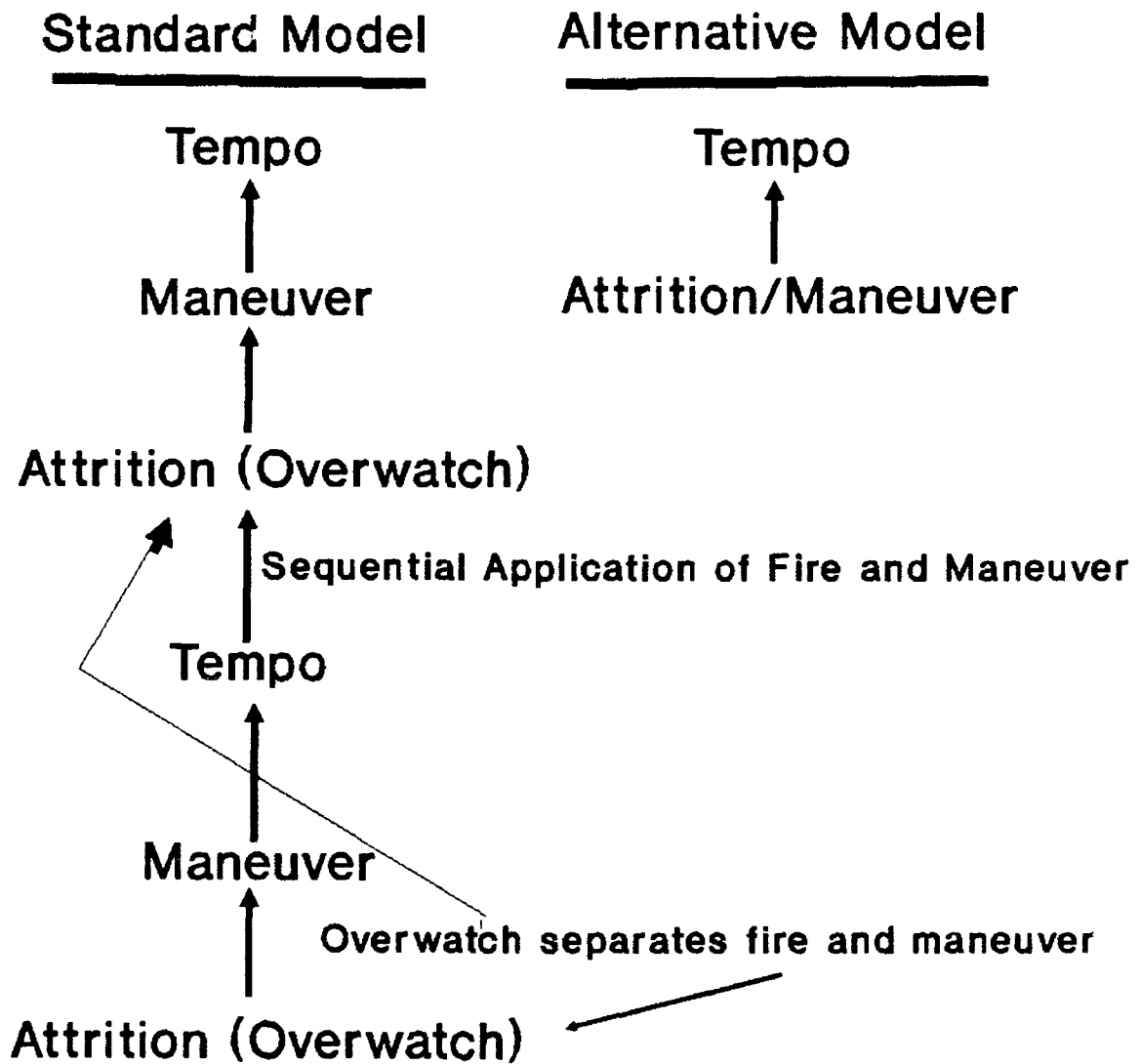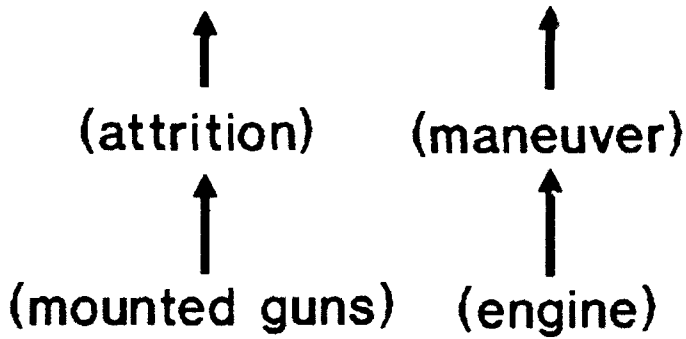| Standard Model	Alternative Model

Tempo

↑

Maneuver

↑

Attrition (Overwatch)

↑ Sequential Application of Fire and Maneuver

Tempo

↑

Maneuver

↑

Attrition (Overwatch)

Tempo

↑

Attrition/Maneuver

Overwatch separates fire and maneuver

Figure 8

PHYSICS OF THE ATTACK

Force = Mass x Acceleration

↑ (attrition) ↑ (maneuver)

↑ (mounted guns) ↑ (engine)

Pressure = Force / Area

↓

Battlespace

Pressure is a unit's mass and force applied across an area

Figure 9

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