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**AIRBORNE DEEP OPERATIONAL MANEUVER:
EMPLOYMENT OPTIONS FOR THE USE OF AIRBORNE
FORCES IN MODERN CAMPAIGNS**

A Monograph
by
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Infantry

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Next, six employment options for the use of airborne forces to conduct deep operations in a modern context are deduced. They are (1) An airborne force can be used to create a second front within a theater of operations; (2) an airborne force can be used to operationally contain an enemy force targeted for destruction within a theater of operations; (3) an airborne force can be used to seize a "Bridgehead"-equivalent for anticipated operational pauses in a campaign within a theater of operations; (4) An airborne force can conduct Coup De Main against high value targets within a theater of operations; (5) An airborne force can conduct light operations in a theater of operations to disrupt and disorganize the enemy's rear facilities and networks and have a cumulative operational impact; and (6) An airborne force can conduct expeditionary operations to achieve political, strategic, and operational aims. Finally, the paper briefly examines the future implications for equipping an airborne force and planning airborne deep operational maneuver.

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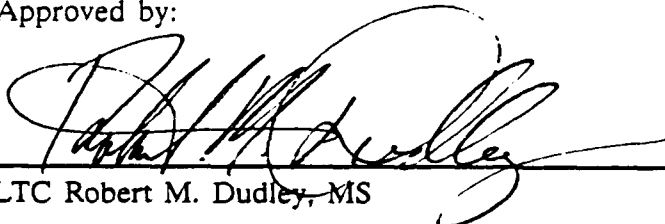
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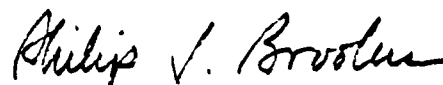
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ABSTRACT

AIRBORNE DEEP OPERATIONAL MANEUVER: EMPLOYMENT OPTIONS FOR THE USE OF AIRBORNE FORCES IN MODERN CAMPAIGNS. by MAJ Danny M. Davis, USA, 42 pages.

The purpose of this paper is to answer two questions. The first question is: Is it feasible to use airborne forces to penetrate enemy airspace and to conduct a vertical envelopment to effect deep operational maneuver? If it is feasible, what are the employment options available for the use of such an airborne force in the conduct of a modern military campaign? To examine these questions, the paper begins with some definitions to provide a common frame of reference. The use of airborne forces in World War II is next examined to determine if the use of airborne forces to effect deep operational maneuver is historically feasible. Next, the contemporary threat is discussed as it is relevant to the employment of airborne forces in a modern context. Next, the feasibility of the use of airborne forces with some limitations to conduct deep operational maneuver is established in the context of the maneuver, firepower, and protection aspects of the combat power model. Next, the theory of deep operations and the use of airborne forces to conduct these kinds of deep maneuvers is examined in the theories of Clausewitz, Jomini, Tukhachevskiy, Triandafillov, and Simpkin. Next, six employment options for the use of airborne forces to conduct deep operations in a modern context are deduced. They are: (1) an airborne force can be used to create a second front within a theater of operations; (2) an airborne force can be used to operationally contain an enemy force targeted for destruction within a theater of operations; (3) an airborne force can be used to seize a "bridgehead"-equivalent for anticipated operational pauses in a campaign within a theater of operations; (4) an airborne force can conduct coups de main against high value targets within a theater of operations; (5) an airborne force can conduct light operations in a theater of operations to disrupt and disorganize the enemy's rear facilities and networks and have a cumulative operational impact; and (6) an airborne force can conduct expeditionary operations to achieve political, strategic, and operational aims. Finally, the paper briefly examines the future implications for equipping an airborne force and planning airborne deep operational maneuver.

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TABLE OF CONTENTS

Section	Page
I. Introduction	1
II. Definitions of Terms	2
III. Normandy as a Case-Study for the Use of Airborne Forces to Conduct Operational Maneuver	6
IV. Current Feasibility of the Use of Airborne Forces to Conduct Operational Maneuver	11
V. The Theory of Airborne Operational Maneuver	20
VI. A Synthesis of Modern Employment Options for Airborne Forces in the Conduct of Operational Maneuver	32
VII. Implications for the Future Uses of Airborne Forces for Operational Maneuver	40
Endnotes	43
Bibliography	47

SECTION I: INTRODUCTION

With the renewed emphasis on the operational level of war in the Army's FM 100-5, the discussion of operational maneuver and operational depth has taken on new urgency. In addition, given the strategic environment, the political context, and the global scope and multiple nature of the threat against the United States, the American policy-makers have found that they increasingly need a rapidly deployable force to deter hostile action against our interests. This force must be strategically mobile and must be flexible enough to be employed in a low-, mid-, or high-intensity environment. Further, this force must be capable of conducting operational maneuver within a theater of operations. It seems that an airborne division might be an ideal force to effect such maneuver to operational depths. Indeed, when General Kurt Student was forming and training airborne units for use in World War II, he said that he "saw [his] task [to be] developing the parachute and air-landing troops gradually into an instrument of operational, even battle deciding significance."¹ Some of the airborne operations of World War II appear to validate General Student's high hopes.

If there exist examples of airborne maneuver to operational depths in the World War II environment, it would seem that such maneuvers should still be viable. However, the strategic environment, the nature of the threat, and the

trends of modern technology have altered the context in which airborne maneuver must be conducted. So the questions become: is airborne maneuver still feasible and, if so under what conditions is it still feasible?

If airborne maneuver is still feasible, the questions become: what are the theoretical principles for the conduct of deep operations and how does airborne maneuver fit into that existing body of theory?

If airborne maneuver is still feasible and is supported by sound, logical military theory, then one should be able to deduce some doctrinal employment options for the use of airborne forces to maneuver to operational depths.

Finally, where there is a gap between theory and practice, one should be able to deduce implications for doctrine, force development, and training. But, before any of these questions can be addressed, the terms of the discourse must be established.

SECTION II: DEFINITION OF TERMS

Clausewitz said that maneuver creates an effect out of nothing "by using the mistakes into which the enemy can be lured... It is in fact a play of balanced forces whose aim is to bring about favorable conditions for success and then to use them to gain an advantage over the enemy."² For Jomini, maneuver in the art of war consisted of "bringing into action upon the decisive point of the theater of operations the greatest possible force."³ Further, decisive

points were "decisive" because the characteristics of the terrain on which they were located conferred a distinct advantage relative to an enemy within the theater of operations ("geographic decisive points") or because of their temporary relation to moving enemy forces ("accidental points of maneuver").⁴

FM 100-5 defines maneuver as "the movement of forces in relation to the enemy to secure or retain positional advantage."⁵ Further, operational maneuver "seeks a decisive impact on the conduct of a campaign. It attempts to gain advantage of position before battle and to exploit tactical successes to achieve operational results."⁶

All of these definitions imply that operational maneuver is relational to an enemy force, and it occurs in a theater of operations. Maneuver implies movement using terrain and/or fires. Further, operational maneuver implies maneuver that has "operational" or "decisive" results.

This raises the question of what is "operational"? Again FM 100-5 defines operational art as the "employment of military forces to attain strategic goals in a theater of war or theater of operations through the design, organization, and conduct of campaigns and major operations."⁷ This definition implies that the term "operational" connotes a larger scope in the dimensions of time, space, and forces. "Operational art" entails a longer time period, a larger space, and generally larger forces

than tactics does. However, the key is the result, the intended effect, the object of the action. If an action furthers the attainment of a strategic goal, then it is "operational."

This gives us a clue as to what "decisive" means. Usually, decisive actions are interpreted to be those that decide battles or major engagements. However, a "decisive" action in an operational sense can analogously be thought of as one that is crucial to the success of an operation or campaign and that supports the attainment of the strategic end. A "decisive" action in this operational sense does not necessarily have to be an independent action, nor does it have to be the main effort. So, operational maneuver is movement within a theater of operations by a military force relative to an enemy in order to achieve operationally decisive results that contribute to the attainment of a stated strategic goal.

Because of the nature of modern warfare, operational maneuver is a joint action, and it focuses on defeating the enemy center of gravity which is, as Clausewitz noted, the "hub of all power and movement, on which everything depends."⁸ In maneuver warfare this is usually done by applying leverage in the realm of time and space against a decisive point. To get this leverage, it is necessary to penetrate the enemy front, and envelop his flank, or turn his rear. This implies deep operations.

Deep operations at the operational level, according to FM 100-5, entail "efforts to isolate current battles, and to influence where, when, and against whom future battles will be fought."⁹ This definition establishes maneuver at operational depths in the "time-context" of a campaign or major operation, and in the "space-context" of a theater of operations. Further, the size of the force must be at least large enough that its effect upon the integrity of the enemy's rear area cannot be ignored by that enemy.

The Soviets define deep operational maneuver similarly. In addition they provide some "rule-of-thumb" distances that would apply to a mid- and to a high-intensity environment in a European scenario. They distinguish an operational-tactical depth of 20- 200 kilometers that is the area of planning for an army to use an airborne battalion; an operational depth of 50-300 kilometers that is the area of planning for a front to use an airborne brigade; and an operational-strategic depth of over 200 kilometers that is the area of planning for a theater of strategic military operations to use an airborne division or larger.¹⁰ So, the Soviet doctrine gives some more clues to the time-space-force dimensions of the deep operational maneuver box for conventional operations in Europe.

The Soviets also define operational depth in terms of the objectives that a force conducting deep operational maneuver would be going after. They define these objectives

relative to the enemy force. Examples of such targets are: operational reserves, Army headquarters, signal centers, airfields, Army and higher unit artillery units, nuclear storage sites, and major logistics concentrations.¹¹ So besides the time, space, and force aspects of deep operational maneuver, there is the aspect of the classification and importance of the target which is being attacked. It should be an "operationally significant target," a "high-value target," or a "decisive target." That is, its capture or destruction should have a direct impact on the outcome of the theater campaign and the attainment of the strategic goal.

LTG James Gavin felt that airborne forces should only be used to attain decisive results,¹² that is, for operational maneuver. That contention has been contested in the years since World War II. If we consider any airborne, airland, or air assault force as an "airborne force," the question becomes: is it true that airborne forces could accomplish deep operational maneuver in World War II? And if they could, then the next question is: is it still feasible to use airborne forces for deep operational maneuver in a modern context?

SECTION III: NORMANDY AS A CASE-STUDY FOR THE USE OF AIRBORNE FORCES TO CONDUCT OPERATIONAL MANEUVER

Historically, armed forces of several countries have launched airborne operations in the context of modern

combat. The Germans conducted airborne operations at Eben-Emael in support of the drive across France in 1940, and later in Crete in 1941. The Allies conducted airborne operations in Sicily, Salerno, Normandy, Holland (Operation Market-Garden), and the crossing of the Rhine (Operation Varsity). The airborne assault to support the Normandy Invasion offers an appropriate example for determining at least the historical feasibility of airborne deep operational maneuver in 20th century warfare.

Early in the planning of the Normandy Invasion in the fall of 1943, both Arnold and Marshall advocated the use of airborne forces for operational maneuver to operational depths. Their plan called for the main effort to be the airborne operation, the objective to be Evreux near Paris to establish an airhead, the aim to link-up with the French underground to hold and enlarge the airhead for a planned link-up with amphibiously landed forces coming from Normandy.¹³ Marshall later said that these airborne forces could have acted with "great effect in splitting up the Germans very quickly at the start. And the minute it [that is, the integrity of the German defense] was a little split up, the whole thing would fall apart because the continued reinforcement [by U.S. forces] would have been a simple matter."¹⁴ As can be seen, their original conception called for the airborne deep operation to be the main effort essentially to create a second front to splinter the German

effort when responding to the Allied invasion of Europe. It was to be a true operational vertical envelopment.

However, because of the experiences in Italy, the pessimism of the British, and the reluctance of Eisenhower to accept the audacity of this plan, the airborne operation was scheduled and conducted on considerably shallower targets. As late as February 1944, Marshall wrote Eisenhower that he was disappointed in the decidedly more conservative plan that was proposed. In his effort to convince Eisenhower, he argued that a deep operational maneuver would be a true "vertical envelopment and would create such a strategic threat to the Germans that it would call for major revision of their defensive plans... It should be a complete surprise... It would directly threaten the crossings of the Seine as well as the city of Paris... In effect, we would be opening another front in France..."¹⁵ Eisenhower was not persuaded.

In the early hours of 6 June 1944, the airborne operation was executed on the Contentin Peninsula to seize key terrain, and to prevent the reinforcement of beach defenses while the Allied amphibious operation was being conducted. The 101st Airborne Division inserted, and seized four exits controlling four causeways that bridged the marshy land 4-6 kilometers inland from the Utah Beach landing site. This operation contributed significantly to the success of the Utah Beach landing and to the speed with

which the beachhead was expanded. As Blair notes, the operation caused "panic and confusion, cut lines of communications, and blocked reinforcements to the beach units as well as lines of retreat."¹⁶

The other major objective of the 101st Airborne Division was to capture a bridgehead across the Douve River at Carentan which was important as a transportation node (called a "gateway" city), and as the point of the eventual link-up of V(US) Corps and VII(US) Corps. The plan called for the seizure of Carentan by 7 June. After a scattered insertion that was off the target, the 101st succeeded in gaining a toe-hold across the Douve at La Barquette before the attack bogged down. The seizure of Carentan was finally accomplished on 12 June.¹⁷

Meanwhile, the 82nd Airborne Division inserted 16-20 kilometers behind the beachhead to seize key terrain in the vicinity of St. Mere-Eglise, and to seize the bridges across the Mederet River at La Fiere and Chef-du-Pont. This was done despite widely scattered drops on the insertion and isolated, and bloody fighting in the St. Mere-Eglise Triangle. Having been reinforced by gliders on D+1, armored forces that had landed amphibiously linked up with the 82nd later on D+1.¹⁸ This action by the 82nd had the effect of blocking German reinforcements from interfering with the Allied landing at Utah Beach, and it gained bridgeheads across the Mederet River by the end of D+1 that served as a

springboard for the operations of Collins' VII(US) Corps to cut the "waist" of the Contentin Peninsula and to drive north to capture Cherbourg. As Esposito notes, the effect of the airborne operations confused the Germans and "caused an overestimation of Allied strength. Confused, uncertain of Allied intentions, and dispersed in small groups in the villages, the Germans were never able to mount the expected major counterblow."¹⁹

The airborne operations in support of the Normandy Invasion were not as deep as Marshall and Arnold originally conceived, but the effects of the operations were arguably operational nonetheless (in the sense of "major operations"). They were not the main effort of the Normandy invasion, but they were crucial to the success of the main effort, and they were one of the contributing factors to the relatively easier time that the Americans had landing at Utah Beach compared with the bloody landings at Omaha. The airborne operations conducted in Normandy were planned to have, and in fact did have, a decisive impact on the conduct of the campaign by achieving the isolation of the battle on the beachhead, and by seizing the bridgeheads across the Mederet and the Douve Rivers to set the terms of future battles. This suggests the employment options of using airborne forces to seize lodgments, to seize bridgeheads to facilitate future operations, or to block operational reserves in order to operationally contain the enemy. So,

while the airborne landings in Normandy have been largely considered to be tactical in nature, their effects were operational-tactical in scope, and these effects suggest the feasibility of using airborne forces in bolder ways to conduct operational maneuver.

SECTION IV: CURRENT FEASIBILITY OF THE USE OF AIRBORNE FORCES TO CONDUCT OPERATIONAL MANEUVER

Although things have changed since World War II, there has not been a revolutionary change in the way conventional operations are conducted. The current strategic environment in which the American military must operate is one of competition to protect American interests globally, not just in Europe. Further, since World War II, the essentially bipolar model of superpower interaction between the United States and the Soviet Union has evolved into a multipolar system with the third world increasingly being the area of competition. So the threats, interests, and areas of possible operations have vastly grown.

However, the threat will likely be sophisticated even if one postulates a third world country as a scenario of a future conflict. As John Adams notes, the North Koreans have 2800 tanks... the Vietnamese have 2500 tanks, and fully one third of the Nicaraguan Army is mechanized.²⁰ Further, all these countries are active regionally. Perhaps the most active country is Cuba. So for this reason, let's consider a Cuban force as the base threat that we might expect an

airborne force to have to fight.

The Cuban force would be very sophisticated and modern. The Cuban Armed Forces have 15 infantry brigades, some of which are mechanized; they have 8 independent battalions. In terms of weapons systems, Cuba has 800 tanks (some of which are T-72's), 550 Armored Fighting Vehicles, 400 Armored Personnel Carriers, 1200 artillery pieces, 100 self-propelled guns, 50 Surface-to-Surface Missiles (FROG-4), and assorted anti-aircraft guns (to include the ZSU 23-4), and Surface-to-Air Missiles (to include the SA-9). Further, the Cubans possess a formidable air threat. They have 103 helicopters, and 302 fixed-wing combat aircraft. However, the Soviets control the strategic airlift.²¹ So it is evident that Cuba possesses the full range of fairly modern maneuver, fire, air defense, command and control, and close air systems. And at the behest of the Soviets, they have a good ability to deploy that force world-wide.

Consider the deployment posture of the Cuban forces. According to John H. Williams, the Cubans have 30,000 troops in Angola, with more troops in Ethiopia, Mozambique, and Yemen, not to mention the advisors that Cuba has in many more places.²² In some sense these forces may be considered "forward-deployed" in areas of the world that the U.S. would be hard-pressed to project a force and sustain it.

So, an airborne operational maneuver in many areas might have to go up against a Cuban-style threat with the

full panoply of air defense, armored, air, artillery, chemical, and missile threats. To examine the current feasibility of conducting airborne operational maneuver, let's use three of the elements of combat power postulated in FM 100-5: maneuver, firepower, and protection (without losing sight of the fact that leadership is still of very crucial importance).

First, consider the category of maneuver. As Adrian Hill notes, an airborne force needs long-range punch, mobility, protection and extended communications ability.²³

Essential to the maneuver of an airborne force is the ability to fly. This means airframes and trained crews. However, in a modern context, as Thomas Waller notes, all ground forces will depend to some degree on airlift.²⁴ Unless an airborne operation does not need a lot of airframes flown by trained pilots, or unless there exists an overabundance of airframes and crews, then this means there will be competition for scarce resources and large military opportunity costs and risks associated with conducting an airborne operation.

In fact, airborne operations do consume a large number of airframes. Waller notes that it takes 90 C-130's or 56 C-141's to transport one small airborne brigade of 3900 men.²⁵ Joel Snow claims that it could take 182 C-141's to deliver one brigade depending on the forced-entry package.²⁶ As Maurice Tugwell notes, airborne operations are expensive

and risky in terms of an air effort.²⁷

Given the number of aircraft that an airborne operation would consume and the limited number of airframes that we have to meet all our other requirements, it appears that conducting large airborne operations would be very difficult. However, the real constraint is the trained crews. MAC is only required to maintain trained air crews to be able to drop one airborne brigade in one drop.²⁸ This means that one must limit the maneuver force to one brigade, which creates a "force-adequacy" problem"; one must airdrop one brigade and airland the remainder of the force (if the airframes are available), which creates a "time-adequacy" problem; or one must make multiple round trips through enemy airspace to insert an entire airborne division, which creates another "time-adequacy" problem. Further, the large number of aircraft necessary to drop even one brigade creates a "space-adequacy" problem for the maneuver of the airplanes in a penetration of the enemy ADA "crust" and through the air corridor to the objective area. All of these facts severely limit what options for maneuver and what options for sizing the force package are available for an airborne operation.

Another maneuver issue that creates problems of "space and time management" arises from the requirement for worldwide deployment. Requirements to refuel aircraft, and to generally replenish and prepare the force just before the

forced entry necessitate the use of an intermediate-staging-base (ISB). Further, the movement of the force requires negotiating other countries' airspace. However, as Charles D. McMillin points out, not all countries permit the use of their airspace or airfields for such purposes.²⁹ Also, not all airfields are suitable for the force to use. The size of the force necessitates choosing an airfield with sufficient size to handle the force, to park the airframes, and to refuel the aircraft. All these factors complicate time-space calculations and have a restrictive impact on the ability to maneuver the airborne force.

However, given that even a brigade can have operational effects, and given that sufficient time and space can be found to plan and execute the airborne operation, an airborne operational maneuver may still be feasible. Further, given that the strategic objective is important enough to justify the opportunity costs of devoting so many resources to a single airborne operational maneuver, such a maneuver may still be essential in a modern combat context.

Now, let's consider the modern feasibility issue from the aspect of the firepower component of the combat power model. As R. L. Garthoff notes, the airborne force needs air superiority, adequate artillery, adequate electronic warfare assets, adequate air defense, and adequate counter-air-defense capabilities.³⁰ Certainly, the threat that virtually any airborne force would face would include an

indirect fire threat and some degree of an armor threat once it is on the ground. Based on the "lightness" of an airborne force, and the sophistication of the threat, the writers of Airborne Division 86 concluded that, in general, airborne units were "not suited for sustained ground combat without major augmentation."³¹

However, airborne forces can be tailored to the mission and to the threat. The 82nd Airborne Division does have a substantial anti-armor capability, and some lightly armored vehicles. It does have some light artillery. It does have more firepower than a regular light division. Additionally, as LTG L. H. Brereton, First Allied Air Army Commander during World War II, noted, it is useful to remember that the threat is not nearly as formidable nor is the risk of immediate powerful counterattacks as likely, the deeper the airborne operation is conducted.³² Yet there are some scenarios where such an airborne force would need some augmentation to be effective. But this is a limitation. It does not necessarily imply non-feasibility.

The most challenging problem to be solved for any airborne planner is how to protect the force. Although the planning of an airborne operation is driven by the ground tactical plan on the objective, the first problem that any airborne force will have to solve is how to penetrate enemy air defenses. However, this problem can be solved with adequate planning, and resourcing. One way to protect the

force from the air defense threat is the firepower solution. The execution of Joint Suppression of Enemy Air Defense(JSEAD), the use of electronic warfare, the use of fighter escorts to cover the movement to the objective area, the use of fighters to destroy enemy air defense batteries, the use of missiles, coordinated ground attacks, and unmanned aerial vehicles to defeat enemy air defense batteries and their associated command and control, are all ways of attacking an enemy's air defense systems with the means of firepower in order to effect a penetration of his air-defense "crust."

Another way to protect the force from the enemy air defense threat is to use the means of maneuver. As Waller notes, only one-third of the Soviet air defense system is effective at night.³³ This implies doing the airborne operation at night or adverse weather utilizing the All-Weather Air Delivery System (AWADS) as a way of reducing the threat and protecting the force. Further, an airborne planner could protect the force by dispersing the force to diverse drop zones after the initial penetration of the initial air defense belt, thus offering the enemy smaller and multiple targets to have to acquire, track, and engage. The planner could choose Drop Zones (DZ's) that are large enough to allow aerial formations other than "staggered trail" in order to reduce the time that aircraft are flying at reduced drop speeds over the DZ, thus reducing the

exposure time of the airborne force to enemy air defenses in the vicinity of the DZ. The planner could plan to fly at lower altitudes to avoid detection, and tracking. The planner could take advantage of the non-linear battlefield to find with intelligence assets the gaps in the enemy's air defense system and then plan routes to avoid his air defense strengths. Further, airborne operations could be viable from the aspect of protection in a theater where force to space ratios are low or where coasts, mountains, jungles, or neutral countries offer open aerial flanks where air forces can avoid enemy strength in their approach. Once the dynamics of battle make their effects felt, those gaps in the air defense system will become more and more apparent. For example, as Snow notes, when an enemy is withdrawing, his air defense systems become disorganized.³⁴ Using an airborne force to act as a blocking force to assist in the pursuit operation of such an enemy might be ideal.

As Adrian Hill points out, the United States Air Force conducted Operation Linebacker II in 1973 in North Vietnam with 729 sorties of B-52 aircraft for almost 2 weeks against a strong enemy air defense system and lost only 15 aircraft with 29 others damaged.³⁵ The implication is that even return trips to the same objective area during an airborne operation in order to sustain the force by aerial resupply or to reinforce the force or to build up the force may not be unfeasible. Technical means that allow the jamming or

the spoofing of enemy air defense systems and low-level penetration that allows the avoidance of detection by enemy air defense systems are also considerations. So it is apparent that while the air defense threat is non-trivial, it is not unbeatable.

Another aspect of protecting the force, is sustainment. Doubtless, the airborne force will be difficult to sustain once it is in the objective area. As Waller notes, planners estimate it will take as many as 14 C-130 type sorties per day to sustain a medium airborne brigade in a mid-intensity environment.³⁶ The problem will be complicated by the requirement to establish lines of support via Air Lines of Communication (ALOC's) that will have to be held open against an air defense threat long after the initial surprise of the airborne operation has worn off. Further, the supplies will have to be flown to ICB's that will require building a support infrastructure and the use of airframes that will in all likelihood already be overcommitted.

However, there are two alternatives to providing resources to insure sustainment of the airborne force. One is to plan the airborne operation in conjunction with a coordinated air-ground operation that envisions a link-up at a given period. Most planners believe that the airborne force could be self-sustaining for three to five days; this would limit the depth to which the airborne operation

could be conducted behind the front lines. This indicates the risk that would have to be balanced with the potential value of the operation to the overall campaign.

The other alternative would be to plan extraction of the airborne force. This would mean that the airborne operation would actually be a raid. While such an operation may have operational significance, it would require a target to be destroyed or captured that had rare strategic value and that was within the capability of the airborne force to destroy or capture.

So to recapitulate, it appears that airborne operations against contemporary threat targets of strategic significance as a crucial part of a military campaign are difficult, but feasible. There are severe problems building up adequate combat power in the areas of maneuver, firepower, and protection. But, as Snow notes, "airborne warfare is a method, not a weapon."³⁷ As such, airborne warfare is subject to change, and to development. It is a dynamically evolving method, not a static dinosaur. Certainly, airborne operations that can have operational significance are still feasible, but what are the options for employment of airborne forces in the conduct of such operations?

SECTION V: THE THEORY OF AIRBORNE OPERATIONAL MANEUVER

The Soviet military thinker Michail Tukhachevskiy was one of the first to examine the theory of how to use

airborne forces to effect operational maneuver. In his book, New Problems in Warfare, he examined how best to accomplish the decisive defeat of an enemy army in the equivalent of a theater of operations. The problem as he assessed the experiences of the First World War, and the Russian Civil War, and as he assessed the developments of the internal combustion engine and the airplane, was how to restore maneuver to the battlefield using the new technologies. As he wrote, during the First World War, it "was difficult to inflict a decisive defeat upon the enemy through an engagement--he slipped away."³⁸ Further he wrote that airborne forces along with armored forces offered new forms of conducting warfare that made battles in depth possible and insured the "possibility of inflicting a decisive, irreparable defeat upon enemy forces."³⁹ This led to Tukhachevskiy's developing the concepts of simultaneous engagements throughout the depth of the theater to operationally contain an enemy army and to decisively defeat it.

As Tukhachevskiy saw it, the problem in the First World War on the Western Front was that the line of contact between armies had stretched to extend across the whole continent. As a result there were no assailable flanks to maneuver against. To create a flank required a penetration that required the massing of overwhelming combat power to be successful. But this freed enemy forces from unthreatened

areas to be moved to the area of the attempted penetration. To overcome this difficulty required the planner to penetrate quickly before those forces could be moved from other sectors to the site of the penetration. Alternatively, the planner had to attack along a broad front to hold enemy forces in non-breakthrough sectors in place.⁴⁰ Clausewitz also noted this phenomenon. He noted the tension between the need to mass against the enemy versus the need to disperse, the need for "concentrating one's force or of extending them over numerous posts."⁴¹ In other words, both theorists noted the need for fixing attacks in non-breakthrough sectors as well as mass in the breakthrough sector in order to assure the success of an offensive operational maneuver. This amounts to operationally containing an enemy army along the breadth of the front.

However, Tukhachevskiy noted that the growth in the size of modern armies that were deployed on limited amounts of space had necessitated the need for echelonment, which meant the growth of operational reserves. With the ability of railroads to move these operational reserves quickly to the point of threatened breakthrough, a defending enemy army could make operational maneuver in a modern context even more difficult. As Tukhachevskiy noted, "the old forms of operational containment could nail down a large number of enemy units along all sectors of the front line, but they were incapable of restricting enemy actions from the

depths."⁴² So the problem of modern operational maneuver is to immobilize the enemy operational reserves located in depth, that is to operationally contain the enemy so that the enemy's main body in the main theater can be destroyed.

As another Soviet military thinker named V.K. Triandafillov wrote, the successful outcome of modern operational maneuver depends on the ability "to surmount the entire depth of the enemy tactical disposition and, immediately thereafter, also to push back those units, which during that time, will be brought [up] by means of a march..."⁴³ Further Triandafillov wrote that "combat actions take a completely different turn when the defense lacks a large number of free reserves or when the defense is incapable of supplying forces swiftly to the area of the operation..."⁴⁴ This suggests the need for simultaneous action throughout the depth of the theater of operations with an emphasis on operationally containing the enemy force targeted for destruction by isolating that force from the operational reserves at the enemy's disposal.

Tukhachevskiy saw airborne forces as particularly suited for this purpose. He wrote that "containment of rear areas and all deployments of enemy forces in depth should be achieved by airborne assault landings between the areas of disposition of his corps, army and army group reserves."⁴⁵ So for Tukhachevskiy, operational maneuver had to focus on the destruction of an enemy force of operational

significance. This required a penetration (breakthrough) and preferably a successive turning movement coupled with a simultaneous operational containment of the enemy force from its operational reserves. Airborne forces conducting a deep vertical envelopment appeared to be ideally suited for the performance of this operational containment function that was vital to the success of the campaign.

Tukhachevskiy suggested another employment option for airborne forces to conduct operational maneuver. He recognized that apart from joint operations, the air force could conduct independent operations of two types, one of which consisted of bombardment and airborne assault landings.⁴⁶ He wrote that "bombardment and airborne assault landing operations could have considerably greater independent importance. The results of bombardment can be immediately and directly exploited by assault landing forces. During the civil war or in intensified class wars this type of action could often be of decisive importance."⁴⁷ In other words, air force and airborne operations might independently achieve decisive results of an operational nature when used to conduct deep operational maneuver. So Tukhachevskiy felt that "with the use of airborne motorized forces... a considerably greater decisive character can be imparted to enveloping operations than was the case in the past."⁴⁸

Another employment option for the use of airborne

forces in the conduct of operational maneuver is suggested by the theories of Clausewitz and Jomini. Clausewitz noted that, in general, one of the dialectical tensions that exist in determining the method of operational maneuver is the one that exists between the need for "outflanking the enemy or of operating on interior lines."⁴⁹ In general, Clausewitz noted that envelopment (outflanking the enemy) "suits the attack."⁵⁰ This implies that vertical envelopment as an employment method for the use of airborne forces in offensive operational maneuver is certainly an option, when the risk of leaving interior lines is outweighed by the payoff of the operation.

The other employment option for the use of airborne forces in offensive operational maneuver is suggested by the concept of the "operational pause." As Clausewitz noted an "attack cannot be completed in a single steady movement: periods of rest are needed, during which the attack is neutralized, and defense takes over automatically."⁵¹ That is, because of the operation of the forces of friction, an operational offensive may slow to a halt before the strategic aim of the overall campaign can be achieved. Further the effect of this pause, while necessary, is pernicious. He wrote that an operational offensive is "a constant alternation and combination of attack and defense. The latter, however, should not be regarded as a useful preliminary to the attack or an intensification of it, and

so an active principle; rather it is simply a necessary evil, an impeding burden...It is its original sin, its mortal disease."⁵²

Similarly Jomini wrote about the temporal combinations of attack and defense when conducting major operations and campaigns. As he wrote, whatever the advantages of the offensive operational maneuver, either militarily or politically, "it may not be possible to maintain it exclusively throughout the war; for a campaign [that is] offensive in the beginning may become defensive before it ends."⁵³ In other words, an offensive campaign may consist of several offensive-defensive combinations over time.

This suggests another option for the use of airborne forces. If all major operations and campaigns are likely to require operational pauses to build combat power back up, then it behooves the planner to anticipate these pauses and to make them as short as possible. It might be possible to use airborne forces to seize bridgeheads or other key terrain to facilitate the operational pauses of the main ground forces conducting the offensive operation. The early seizure and defense of these "bridgeheads" could reduce the time required for the operational pause, and the "bridgehead" itself could serve as the springboard for subsequent major operations in the campaign. Such an operational maneuver by airborne forces could in fact be crucial to the eventual success of the operations and the

campaign.

Still another option for the use of airborne forces to conduct operational maneuver is suggested by the concept of operational tempo in the writings of Mikhail Tukhachevskiy and Richard Simpkin. Of course Tukhachevskiy felt that a successful operational maneuver required a breakthrough and an envelopment to operationally contain (encircle) a large enemy force so that it could be destroyed. Now the problem developed into how deep to envelop the enemy force in order to contain it? Further, how fast should the enveloping pincers close to effect the encirclement before the enemy force has time to withdraw and escape the trap? Certainly the attacking force can get time to work on his side by fixing the enemy force in position. This can be done by surprise, deception, and frontal attacks limited to the objective of fixing the force in place. In addition, Tukhachevskiy noted that the problem was a time-distance problem. That is, if the envelopment were too shallow, and if these other means of fixing the enemy were unsuccessful, then it "will be much easier for him [that is, the enemy] to pull out [his troops] than for attacking troops to close the pincers. As we can clearly see... the route of withdrawal to the rear in this case is considerably shorter than the enveloping paths from the flanks."⁵⁴ To help solve this problem, Tukhachevskiy offered two solutions. One was to transform the envelopment into a turning movement that went

to greater depth in the theater of operations and whose object was to block the route of withdrawal of the enemy force targeted for destruction. As he wrote, "the less abrupt the bend of the by-passing movement the less the difference in distance negotiated by the encircling and the encircled forces."⁵⁵

The other requirement to solve the problem was to be able to conduct operations at a faster tempo than the enemy could. As Tukhachevskiy noted, "only if the enveloping columns are able after the first attacks with tremendous superiority in men and equipment to develop their success quickly and without stopping is it possible in practice to encircle the enemy."⁵⁶ It is evident, that an airborne force could operate to get deep quickly in order to block the withdrawal of the enemy force targeted for destruction by a major operation. By doing this, it would be crucial to the success of the operation.

Simpkin developed these ideas of Tukhachevskiy in innovative ways. He compared operational maneuver theory to a lever problem in physics. In maneuver theory, he postulated that there are three dimensions to the problem. First, is the dimension of mass, which corresponds to the combined weapons systems and personnel of the formation. Second, is the dimension of time. Third is the dimension of length, which corresponds to the distance (space) that a maneuver must go into an enemy's rear area to turn

effectively an enemy's position.⁵⁷ The defeat of an enemy force by a major operation requires a maneuver force and a holding force.⁵⁸ The holding force, or fixing force, provides the base for the maneuver force to turn on. This creates "leverage" or more accurately a turning moment. The maneuver force must penetrate the enemy front, and this point of breakthrough creates a "hinge" for the turning moment. The energy (combat power) of the maneuver force is a function of its mass (soldiers and weapons systems) and its velocity, which is distance over time. The turning moment that is generated is also a function of the length of the lever-arm (the depth to the rear of the enemy force that the maneuver force penetrates). The efficacy of the operational maneuver is measured by that turning moment. That turning moment is equal to mass (soldiers and weapons systems) times the length (depth of the operational maneuver) of the lever-arm.⁵⁹

Now as Simpkin argued, that length is constrained by two things. First the length (depth of the operation) must be great enough to get beyond the center of mass of the enemy force targeted for destruction by the operation. Second, the length (depth) must not be so deep that the "hinge" of the maneuver becomes vulnerable to counterattack by the enemy force, causing a rupture between the maneuver force and the holding force.⁶⁰

The second variable is time. The operation is being

conducted against a reacting enemy over time. This implies a dynamic not a static process. The time required for the execution of a successful operational maneuver consists of planning and preparation time and execution time. As Simpkin argued, there are two analogous constraints on the time required to conduct a successful maneuver. First, the time allowed for the conduct of the operation must be long enough (that is, the tempo of operations slow enough) so that the maneuver can be properly planned, developed, and controlled; and so that the "hinge" does not become vulnerable to counterattack by the enemy force to threaten the cohesion of the maneuver force and the holding force. Second, the time for the operation must be short enough (that is, the tempo of operation fast enough) that the enemy cannot react quickly enough to conduct an operational withdrawal and escape the operational trap that has been set for him.⁶¹

However, as the operation develops (that is as the strength of the "hinge" becomes established and the enemy begins to contemplate an operational withdrawal), Simpkin argued that the movement of the maneuver force can accelerate with minimal risk to cohesion by launching another maneuver force from an "advanced hinge" or "forward base" to block the withdrawal of the enemy force and to contain it for destruction.⁶² Such a force could be an airborne force used to block the withdrawal of an enemy

force and emplaced under the conditions that link-up with the remainder of the maneuver force would occur within three to five days.

This suggests another employment option for the use of airborne forces in operational maneuver. Such forces could be used in combination with ground maneuver to exploit the initial success of the maneuver or to act as a blocking force in the pursuit phase of the operation. This could make the operation decisive. As Clausewitz noted, "the winner's casualties in the course of an engagement show little difference from the loser's... The really crippling losses, those the vanquished does not share with the victor, only start with his retreat."⁶³ The use of a ground maneuver force to project ahead of a larger maneuver force in order to get behind the enemy and to block his withdrawal was conceived by General Gavrish as an "interpenetration strategy" that allowed advanced armored columns to get to the Mitla Pass and to cut off the retreat of Egyptian forces during the Sinai Campaign in 1967. That maneuver proved to be decisive to the destruction of the Egyptian Army as a fighting force.⁶⁴ Certainly airborne forces would also be ideally suited to do just such an operational maneuver

Now that we have discussed the variables of time (tempo), and length (space, depth, or distance), let's address the last variable of Simpkin's model: mass. The mass (soldiers and weapons systems), or the size of the

maneuver force, must be large enough to accomplish its task. It must have enough firepower as a formation to achieve its objective and to protect itself. However, the minimum force necessary to accomplish a mission depends on the enemy situation and the phase of the operational maneuver. As Tukhachevskiy noted, it may be possible easily "even with small forces, to create very deep barrier zones... Airborne forces may attack the very largest military units being transferred by rail with complete freedom."⁶⁵ He also noted that the strength of "assault landing detachments consists not only in their individual strength but also in the fact that they are dropped in those areas where it is known beforehand that the enemy will be the weaker..."⁶⁶ The implication is that even relatively small airborne forces employed at the right place, at the right time, to accomplish the right task, can cause decisive operational results to accrue to an operational maneuver. They can also cause the rate of confusion and disorganization to accelerate in the enemy force by attacking command and control, and logistics, and by ambushing reinforcement routes. This suggests still another employment option for the use airborne forces in operational maneuver.

SECTION VI: A SYNTHESIS OF MODERN EMPLOYMENT OPTIONS FOR AIRBORNE FORCES IN THE CONDUCT OF OPERATIONAL MANEUVER

History, contemporary reality, and theory suggest six

employment options for airborne forces that can constitute operational maneuver. The first employment option is the use of an airborne force to conduct an independent aerial penetration and vertical envelopment of an enemy force in a theater of operations in order to achieve operational results by creating a second front in the theater. This method uses the airborne force to render what I. I. Lisy calls "simultaneous blows from front and rear." Marshall's suggestion of dropping two airborne divisions in the vicinity of Evreux near Paris in 1944 would fall into this category. Other examples would be the airborne part of Operation Market Garden in 1944 and the German airborne operation in Crete in 1941. In all these cases the airborne operation constituted the main effort and was expected to achieve decisive, operational results for the campaign. The conditions for employment of airborne forces in such a manner would be rare today in a mid-intensity environment. However, such employment would be conceivable under two conditions. First such a vertical envelopment might be plausible if the initial airborne insertion were merely the vanguard of a much larger force to be landed after the airborne force had secured the airhead. Of course, such an option would have to weigh the payoff of the mission against the risk to the force, and it would have to balance the likelihood of rapid resolution of the campaign by such an employment against the cost of sustaining such a force over

a longer period. It might be that an airborne vertical envelopment to create a second front and force the enemy force to fight in two directions in the theater of operations will work best only when tied to a ground breakthrough and envelopment or turning movement that is intended to link-up with the airborne force within three to five days. Such an operation could still have operational effects.

The second employment option for airborne forces to effect operational maneuver is to insert the airborne force by aerial penetration and vertical envelopment in order to operationally contain the enemy force targeted for destruction. The use of the 82nd and 101st Divisions in the Normandy Invasion in 1944 might be examples of this method. Granted, neither division landed deep in the operational depths of the enemy's rear area; however, the effect of these landings was to block operational reserves from reinforcing the beach defenses, to trap enemy forces between them and the amphibious force, and to confuse the enemy commanders and delay their timely decisions. Certainly, for the initial phase of the invasion, these airborne landings were the Allied main effort, and their effects were arguably crucial, if not decisive, to the success of the amphibious assault. Further, they arguably set the stage for the next major operation of the campaign. Bolder employment of airborne forces for such purposes might indeed pay even

larger dividends.

A third option for employment of airborne forces to effect operational maneuver is to conduct an aerial penetration and a vertical envelopment in order to secure a bridgehead for a planned operational pause. The seizure of the bridges at La Fiere and Chef-du-Pont by the 82nd and the seizure of Carentan by the 101st in Normandy in 1944 would be examples of this method of employment. The effects of these missions were to set the stage for the next major operation by securing springboards for the push to secure the Cotentin Peninsula and to seize Cherbourg. The effects certainly had operational-tactical consequences. Further the seizure of such bridgeheads is arguably crucial, if not decisive, to setting the stage for the next major operation, for minimizing the time spent in the pause, and for maintaining the tempo of sequential operations in order to keep the enemy off balance.

A corollary option for the operational employment of an airborne force that has been suggested by Luttwak is to use it to force an "operational pause" on an attacking enemy in order to gain time for the defender or to regain the initiative.⁶⁸ This suggests a method for the use of airborne forces for operational maneuver while on the overall defensive.

The use of airborne forces to secure a lodgment area is another corollary to the "operational pause" employment

option and is even more likely in the modern context of rapid deployment forces into immature theaters anywhere in the world. An example of this employment option would be Grenada in 1983 where the initial airborne force was the vanguard to establish a lodgment for follow-on reinforcements. The issue is how rapidly the airborne force can get to the target area. Studies show that from notification to closure into Turkey would take 82 hours (3.4 days) for one airborne brigade. Some argue the U.S. Marine Corps could do it faster. However, that would be only one battalion-sized force. Two battalions would take 5 days to close. A Marine Division would take 13 to 14 days. An airborne division can arrive in 10 days.⁶⁹ The advantage of an airborne force in this instance is its ability to reinforce more rapidly and to have access to inland or landlocked areas as well.⁷⁰ All in all, the use of airborne forces to gain bridgeheads for operational pauses or lodgments for reinforcement seems to be a very useful operational maneuver.

Another employment option for the use of airborne forces to effect operational maneuver is to conduct aerial penetration and vertical envelopment in order to conduct a coup de main. Such operations are defined by Jomini as "bold enterprises undertaken by a detachment of an army for the capture of posts of different strength or importance."⁷¹ Further, he notes that "although coups de main seem to be

entirely tactical operations, their importance certainly depends on the relations of the captured posts to the strategic combinations in hand."⁷² In other words, though the event may be tactical, it may have operational effects and so be characterized as a form of operational maneuver having a crucial and possibly decisive impact upon the outcome of the campaign. Even in a modern context, it is easy to conceive of the use of airborne forces of varying sizes to conduct coups de main against high value targets, the destruction or capture of which would have critical operational effects. Some high value targets that might be suitable for a coup de main by an airborne force would be: sea-lane chokepoints, critical airfields, critical harbors, logistics dumps, command and control centers, nuclear storage sites, or, as C. N. Connelly suggests, political targets like an enemy capital city.⁷³

Another way to use an airborne force to effect operational maneuver would be to conduct an aerial penetration and a vertical envelopment to conduct numerous insertions similar to the "oil-spot method" developed by the Germans in World War II.⁷⁴ This method would envisage landing smaller forces in the rear area of an enemy force to create many perimeters to be expanded. Those units enjoying the most success would be identified as the main effort and then reinforced to continue to expand to absorb the smaller perimeters. This method would focus on disrupting and

confusing the command and control structure and the logistics network in the enemy's rear area, and would use light infantry techniques to establish "ambush nets" to stifle logistics movements and the movement of reinforcements in the enemy rear areas. The impact would be cumulative and psychological. However, this employment option would be limited by the requirement to either "live off the land" or to sustain the disparate forces by aerial resupply, which would be a very complex as well as risky undertaking.

A final employment option for an airborne force to be used to effect operational maneuver would be as an expeditionary force. The capability to conduct rapid insertion world-wide is a useful deterrent. Taft argued for such "responsive insertion forces for other parts of the world [other than Europe]."75 In case deterrence fails, the ability to get a viable force to a region quickly and first may be sufficient to secure the political-strategic aim and the operational objective. As MG Meloy wrote, "the application of even a small force early in a crisis can have a profound effect and may well outweigh the choice of having to insert a heavier force later."76 Where the importance of being to a theater first is important, then the "expeditionary" option for employment may pay dividends that would warrant calling it operational maneuver.

To summarize, there are six employment options for the

use of airborne forces to effect operational maneuver in a modern context that are feasible, depending on the analysis of the mission, the enemy force, the terrain, the troops available, and the time allowed to plan and execute the mission. They are further supported by historical examples and by theory. First an airborne force can be used to create a second front in a theater of operations in order to force the enemy to fight in two directions at once. Second, an airborne force can be used in a theater of operations to effect operational containment of the enemy force targeted for destruction by operational fires and maneuver. Third, an airborne force can be used in a theater of operations to seize a "bridgehead"-equivalent for an anticipated operational pause in order to set the stage for future major operations and combinations of battles in the context of a larger campaign. Fourth, an airborne force can be used in a theater of operations to conduct a coup de main to seize or destroy a high value target of operational significance to the theater commander. Fifth, an airborne force can be used in a theater of operations to conduct light operations in order to disrupt and disorganize the enemy's rear facilities and networks and have a cumulative operational impact. Finally, an airborne force can be used in a theater of operations to threaten to conduct or to conduct expeditionary operations that have political, strategic, and operational effects.

SECTION VII: IMPLICATIONS FOR THE FUTURE USES OF AIRBORNE FORCES FOR OPERATIONAL MANEUVER

The continued use of airborne forces for operational maneuver has implications that fall into two categories: equipment, and planning.

First consider equipment. The growth of the air defense threat will make penetration of the airspace of an enemy front more and more difficult. The development of unmanned aerial vehicles may prove essential to accompany an airborne operation in order to locate, target, and destroy or jam enemy air defense systems in the aerial "breakthrough" sector. Further, this effort, coupled with extensive intelligence preparation of the battlefield could allow the airborne force to avoid and bypass (that is "infiltrate") air defense strengths. Also, JSEAD will have to be improved.

Second, the historical evidence indicates that command and control of the airborne force is a singular problem immediately after insertion. This implies the need for innovative assembly aids, and more communications systems down to small unit levels. Further, reliable, light-weight long-range systems will have to continue to be developed for communications between the airborne force and its higher headquarters. Finally, development of reliable communications between aircraft needs to be developed for the Army component commander of the airborne force to

command, control, and disseminate information to his elements while the force is in the air.

Third, many writers feel the airborne force in the U.S. Army lacks tactical mobility once it is in the objective area. When compared to the Soviets, this is certainly true. It would seem appropriate to develop light airborne vehicles more extensively to improve that tactical mobility in an objective area in an enemy's rear area. While such a capability would not always be needed, it should be more available to the planner in order to better tailor the force for some potential missions.

In the category of planning, there are three major implications. First, planners must think of the airborne operations from the departure airfield to the objective area as consisting of two forms of maneuver that are analogous to ground forms of maneuver: penetration of the initial enemy air defense belt, and vertical envelopment through an air corridor whose "flanks" must be protected, possibly by fighter escort.

Second, planners must make a detailed risk analysis to justify the depth of an insertion. Also the risk analysis must justify the value of the target to the overall campaign, and it must justify the devotion of many scarce airframes and crews to the airborne operation at the expense of competing operations.

Third, planners must give detailed analysis to the

problems of sustainment. These will vary from scenario to scenario. They will have a direct bearing on the risk analysis, the depth to which the force can reasonably project, and the time limit imposed on the rest of the force for effecting link-up or extraction.

Properly employed, airborne forces can still feasibly and very effectively conduct operational maneuver. In fact, it may turn out that their potential has not yet begun to be fully tapped.

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