

SPEC OPS

CASE STUDIES IN SPECIAL OPERATIONS
WARFARE: THEORY AND PRACTICE

WILLIAM H. McRAVEN



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**Case Studies in Special Operations Warfare:
Theory and Practice**

WILLIAM H. McRAVEN



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Theory of Special Operations

In the realm of military literature, there is much written on theory of war, ranging from Herman Kahn's thinking about the unthinkable on the nuclear end of the spectrum to B. H. Liddell Hart's indirect warfare on the conventional end. There are theories of war escalation and war termination, theories of revolution and counterrevolution, and theories of insurgency and counterinsurgency. There are general airpower and sea power theories, and more specific theories on strategic bombing and amphibious warfare. Nowhere, however, is there a theory of special operations.

Why is a theory of special operations important? A successful special operation defies conventional wisdom by using a small force to defeat a much larger or well-entrenched opponent. This book develops a theory of special operations that explains why the phenomenon occurs. I will show that through the use of certain principles of warfare a special operations force can reduce what Carl von Clausewitz calls the frictions of war to a manageable level. By minimizing these frictions the special operations force can achieve relative superiority over the enemy. Once relative superiority is achieved, the attacking force is no longer at a disadvantage and has the initiative to exploit the enemy's weaknesses and secure victory. Although gaining relative superiority doesn't guarantee success, it is necessary for success. If we can determine, prior to an operation, the best way to achieve relative superiority, then we can tailor special operations planning and preparation to improve our chances of victory. This theory will not make the reader a better diver, flyer, or jumper, but it will provide an intellectual framework for thinking about special operations. The relative superiority graph that will be shown later is a tool to assess the viability of a proposed special operation.

THE SCOPE OF THIS STUDY

To develop a theory of special operations I had to first limit the scope of the problem. This required developing the following refined definition of a special operation: “A special operation is conducted by forces specially trained, equipped, and supported for a specific target whose destruction, elimination, or rescue (in the case of hostages), is a political or military imperative.”*

My definition is not consistent with official joint doctrine which broadly defines special operations to include psychological operations, civil affairs, and reconnaissance. The eight combat operations I analyzed to determine the principles of special operations and to develop the theory are more closely aligned to what *Joint Pub 3–05* defines as a direct-action mission.† Unlike direct-action missions, however, the eight special operations that I analyzed in this book were always of a strategic or operational nature and had the advantage of virtually unlimited resources and national-level intelligence. The refined definition also implies that special operations can be conducted by non-special operations personnel, such as those airmen who conducted James Doolittle’s raid on Tokyo or the submariners involved in the raid on the German battleship *Tirpitz*. Although I believe the theory of special operations as presented in this book, is applicable across the spectrum of special operations, as defined by *Joint Pub 3–05*, it was developed solely from the eight case studies presented in this work. All usage of the term *special operations* henceforth will adhere to this refined definition.

WHY ARE SPECIAL OPERATIONS UNIQUE?

All special operations are conducted against fortified positions, whether a particular position is a battleship surrounded by anti-torpedo nets (the British midget submarine raid on the German battleship *Tirpitz*), a mountain retreat guarded by Italian troops (Otto Skorzeny's rescue of Benito Mussolini), a prisoner of war (POW) camp (the Ranger raid on Cabanatuan and the U.S. Special Forces raid on Son Tay), or a hijacked airliner (the German antiterrorism unit [GSG-9] hostage rescue in Mogadishu). These fortified positions reflect situations involving defensive warfare on the part of the enemy.

Carl von Clausewitz, in his book *On War*, noted, "The defensive form of warfare is intrinsically stronger than the offense. [It] contributes resisting power, the ability to preserve and protect oneself. Thus, the defense generally has a negative aim, that of resisting the enemy's will ... if we are to mount an offensive to impose our will, we must develop enough force to overcome the inherent superiority of the enemy's defense."² Clausewitz's theory of war states that to defeat "the stronger form of warfare" an army's best weapon is superior numbers. "In this sense superiority of numbers admittedly is the most important factor in the outcome of an engagement, so long as it is great enough to counterbalance all other contributing circumstances. It thus follows that as many troops as possible should be brought into the engagement at the decisive point."³

No soldier would argue the benefit of superior numbers, but if they were the most important factor, how could 69 German commandos have defeated a Belgian force of 650 soldiers protected by the largest, most extensive fortress of its time, the fort at Eben Emael? How can a special operations force that has inferior numbers and the disadvantage of attacking the stronger form of warfare gain superiority over the enemy? To understand this paradox is to understand special operations.

RELATIVE SUPERIORITY

Relative superiority is a concept crucial to the theory of special operations. Simply stated, relative superiority is a condition that exists when an attacking force, generally smaller, gains a decisive advantage over a larger or well-defended enemy. The value of the concept of relative superiority lies in its ability to illustrate which positive forces influence the success of a mission and to show how the frictions of war affect the achievement of the goal. This section will define the three basic properties of relative superiority and describe how those properties are revealed in combat.

Relative superiority is achieved at the pivotal moment in an engagement. For example, in World War II, when the Germans attacked the Belgian fort at Eben Emael, they achieved a decisive advantage—relative superiority—over the enemy within five minutes of the initiation of the engagement by using gliders and shaped charges to gain surprise and speed to subdue the enemy quickly. Although the Belgians fought for another twenty-four hours, the battle hinged on the first few moments, and the outcome of the engagement was virtually assured.

In some cases, the pivotal moment comes before actual combat. In 1943 the British modified an old destroyer, the HMS *Campbeltown*, filled it with four and a quarter tons of explosives, covered it with armor plating, sailed it across the English Channel, and rammed it into the German-held dry dock at Saint-Nazaire, France. This action rendered the dry dock useless for the remainder of the war. Although the German defenses surrounding Saint-Nazaire were the heaviest in the Atlantic, once the HMS *Campbeltown* managed to reach the outer harbor of the port (two miles from the dry dock), the Germans could not stop her. At this point, which was prior to actual hostilities, relative superiority was achieved. The point at which relative superiority is achieved is also frequently the point of greatest risk. The closer the attacking force gets, the tougher the defenses become. However, once you overcome the last obstacle the probability of success strongly outweighs the probability of failure, and relative superiority is achieved.

Once relative superiority is achieved, it must be sustained in order to guarantee victory. In an effort to rescue the Italian dictator Benito Mussolini, SS Capt. Otto Skorzeny conducted a glider assault on an Italian stronghold on top of Gran Sasso peak in the Apennines Mountains. Within four minutes of landing, Skorzeny had stormed the hotel hideout and had Mussolini in his custody. At this point he had achieved relative superiority. However, for the mission to be successful, Skorzeny had to extract Mussolini from the mountaintop and ensure the dictator's safe return to Rome. This interim period between grabbing Mussolini and mission completion required sustaining relative superiority. This was accomplished through boldness on Skorzeny's part and by reinforcing the small commando force with conventional troops.

The ability to sustain relative superiority frequently requires the intervention of courage, intellect, boldness, and perseverance, or what Clausewitz calls the moral factors. For example, during World War II, Lt. Luigi Durand de la Penne, an Italian frogman, clandestinely entered Alexandria Harbor aboard a manned torpedo. He and his second diver overcame an antisubmarine net, depth charges, picketboats, pier security, and an antitorpedo net to reach the British battleship HMS *Valiant*. All they had to do was place explosives on the hull and the mission would have been successful. Unfortunately, as Durand de la Penne dove the manned torpedo under the HMS *Valiant*, the submersible gained ballast and sank into the mud. To make matters worse, his second diver lost consciousness and floated to the surface.

Although physically exhausted from the long dive and freezing from the cold water seeping into his torn dry suit, Durand de la Penne spent the next forty minutes moving the torpedo into position under the HMS *Valiant*. Only through his tremendous perseverance and courage (two of the four moral factors) was he able to sustain relative superiority and complete the mission.

If relative superiority is lost, it is difficult to regain. After the *Campbeltown* rammed the dry dock at Saint-Nazaire, the plan called for eighty commandos aboard the ship to disembark and destroy a variety of targets around the port facility. Although the commandos achieved a distinct tactical advantage when they rammed the dry dock and surprised the German sailors and soldiers, German sailors and soldiers intervened and slowed the commandos' progress when they attempted to destroy the targets ashore. After thirty minutes ashore, the HMS *Campbeltown* commandos were overwhelmed by German reinforcements and lost relative superiority. The engagement lasted another two hours, but the British, because of their numerical inferiority, were never able to regain the advantage. Eventually the commandos were forced to surrender. An inherent weakness in special forces is their lack of firepower relative to a large conventional force. Consequently when they lose relative superiority, they lose the initiative and the stronger form of warfare generally prevails.

The key to a special operations mission is to gain relative superiority early in the engagement. The longer an engagement continues, the more likely the outcome will be affected by the will of the enemy, chance, and uncertainty, the factors that comprise the frictions of war.

At the end of each case study, a graph will be used to show how and when each special operations force achieved relative superiority. This relative superiority graph illustrates how special operations forces, with their cutting-edge technology, access to national-level intelligence, high-quality training, and elite troops, are able to minimize the frictions of war and achieve relative superiority. This graph is intended to be not an analytical tool but a conceptual one to help illustrate why certain missions succeed. Additionally, the graph provides a visual demonstration of the three properties of relative superiority: the pivotal moment can be seen as a dramatic rise in the probability of mission completion; sustaining relative superiority is a gradual rise from the pivotal moment to mission completion; and a decisive drop in the probability of mission completion shows a loss of relative superiority. [Figure 1-1](#) is a representative relative superiority graph.

The X-axis is time, the Y-axis is probability of mission completion. The intersection of the axes is the point of vulnerability (PV). The point of vulnerability is defined as the point in a mission when the attacking force reaches the enemy's first line of defenses. At this point, the frictions of war (chance, uncertainty, and the will of the enemy) begin to impinge upon the success of the engagement. This point of vulnerability is somewhat arbitrary, and the exact location can be debated. Although the so-called frictions of war can affect a mission even during the planning and preparation phases, I have elected to define the point of vulnerability as an aspect of the engagement phase.

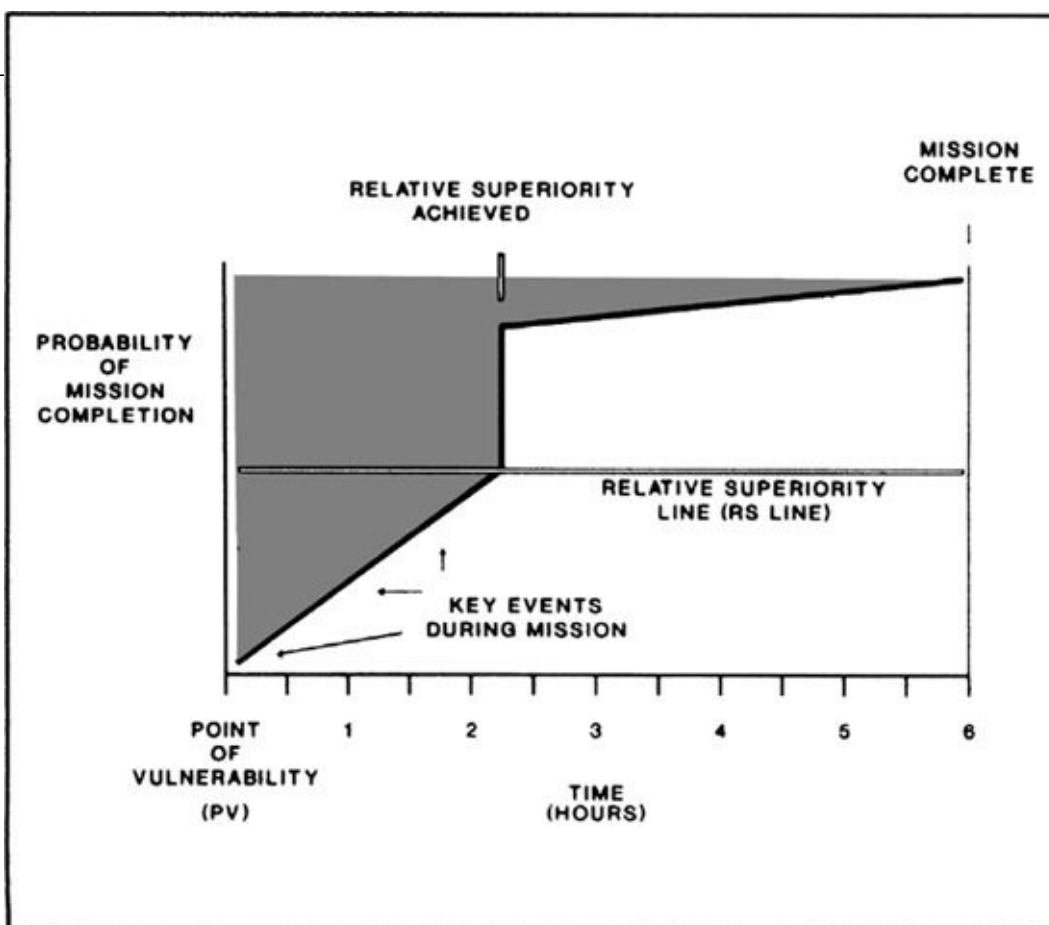


Fig. 1-1. Sample Relative Superiority Graph

The area of vulnerability (AV) is a function of mission completion over time. The longer it takes to gain relative superiority, the larger the area of vulnerability, and hence the greater the impact of the frictions of war. The graph shows that the special operations force succeeds because its inherent advantages (technology, training, intelligence, etc.) allow it to reduce the area of vulnerability, and hence the frictions of war, to a manageable level.

Although there are factors in war over which we have little control, the theory of special operations shows that there are six principles that can be controlled and that have an effect on relative superiority.

THE SIX PRINCIPLES OF SPECIAL OPERATIONS

The six principles of special operations presented in this section—simplicity, security, repetition, surprise, speed, and purpose—were derived from an analysis of eight historic cases.* These principles dominated every successful mission. If one of these principles was overlooked, disregarded, or bypassed, there was invariably a failure of some magnitude. It is these principles that allow special operations forces to achieve relative superiority. Can large forces use these principles to gain relative superiority? It is not likely. Relative superiority favors small forces. This is not to imply that large forces cannot gain some element of surprise or use speed to achieve their goals, but gaining relative superiority requires proper integration of all six principles. Because of their size, it is difficult for large forces to develop a simple plan, keep their movements concealed, conduct detailed full-dress rehearsals (down to the individual soldier's level), gain tactical surprise and speed on target, and motivate all the soldiers in the unit to a single goal. At some point the span of command and control becomes too great for a large force to effectively blend the principles of special operations. Clausewitz states the obvious when he says, "The greater the magnitude of any event, the wider the range of forces and circumstances that affect it."⁴ Large forces are more susceptible to the frictions of war. The principles of special operations work because they seek to reduce warfare to its simplest level and thereby limit the negative effects of chance, uncertainty, and the enemy's will.

To achieve relative superiority, the practitioner of special operations must take account of the principles in the three phases of an operation: planning, preparation, and execution. The principles are interconnected and rely on each other for support. For example, if a plan is not simple, it will be difficult to conceal the operation's intent and even more difficult to rehearse the mission. And if the operation is difficult to conceal and rehearse, it will be nearly impossible to execute with surprise, speed, and purpose.

The Holloway Commission's *Rescue Mission Report*, which reviewed the failed attempt to rescue hostages from Tehran in 1980, shows how the principles of simplicity, security, and repetition are related. The rescue mission was aborted when, due to unforeseen circumstances, there were insufficient helicopters to continue the operation. The report noted, however, that adding additional helicopters would have increased the level of difficulty, which "would [have] result[ed] in an unnecessary increase in the OPSEC [operational security] risk."⁵ The report continued, "OPSEC considerations mitigated [sic] against such a [full-scale] rehearsal and, while the review group recognized the inherent risk in bringing all the forces together in the western US training site, the possible security disadvantages of such a rehearsal seem to be outweighed by the advantages to be gained. The correlation between simplicity, security, and repetition is clear: if a plan is complex will require extraordinary security, and an overabundance of security hinders effective preparation.

In the preparation phase, proper security and constant repetition have a direct impact on the attacking force's ability to gain surprise and speed in the execution phase. Clausewitz in his discussion on surprise says, "Surprise will never be achieved under lax conditions [poor security] and conduct."⁷ Security must remain tight in the preparation phase to prevent the enemy from gaining a disastrous advantage.

Constant repetition, as manifested in training and premission rehearsals, is the lin

between the principle of simplicity in the planning phase and the principles of surprise and speed in the execution phase. For example, Lt. Col. Herbert Zehnder, the pilot of the HH-43 Husky who flew from Thailand to Son Tay, North Vietnam, had the difficult task of landing in the POW camp's small courtyard. It was considered essential to make this controlled crash in the courtyard in order to gain a few seconds of surprise. Initially, this maneuver was considered too difficult, but after hundreds of flying hours and a dozen rehearsals, the difficult landing became easier and surprise was achieved. Constant repetition made the task of landing in a confined area easier and thereby improved the opportunity for gaining surprise.

Constant, realistic rehearsals will improve the attacking force's ability to quickly execute the mission, particularly under combat conditions. John Lorimer, a crewman on the midge submarine that damaged the German battleship *Tirpitz*, said, "If you are going to do anything dangerous, the best way to accomplish it is to train, train, train, so that in the excitement of the situation you do the thing automatically."⁸ Repetition, by its very nature, improves speed on target.

The last of the six principles is purpose. A sense of purpose, namely the understanding of the mission's objectives and a personal commitment to see those objectives achieved, is vital to achieving relative superiority. Although the principle of purpose is most apparent in the execution phase, all phases must focus on the purpose of the mission. Knowing the purpose of the mission will reduce the extraneous objectives, isolate the intelligence required, tailor OPSEC requirements, focus the rehearsals, and in combat ensure the efforts of the commander and the individual soldiers are centered on what is important, the mission.

All of the previous examples illustrate the relationship between the planning, preparation, and execution phases of a mission and demonstrate the synergistic nature of the six principles of special operations. The special operations model shown in [figure 1-2](#) depicts the principles of special operations as an inverted pyramid.

The blocks within the pyramid can be constructed to reduce the frictions of war and achieve relative superiority. Although gaining relative superiority over the enemy is essential to success, it is not a guarantee. The success of the mission, like the inverted pyramid, is precariously balanced on a slender apex. The moral factors of courage, intellect, boldness, and perseverance have to support the pyramid and prevent the frictions of war from toppling it and causing defeat. This model is a tool to help the reader analyze the historical cases and understand the relationship between the principles of special operations and relative superiority. This model also reflects the theory of special operations. It graphically represents the idea that special operations forces succeed, in spite of their numerical inferiority, when they are able to gain relative superiority through the use of a simple plan, carefully concealed, repeatedly and realistically rehearsed, and executed with surprise, speed, and purpose. Failure results when the frictions of war overcome the moral factors. Now let's examine the six principles in detail and demonstrate how they are manifested in combat.

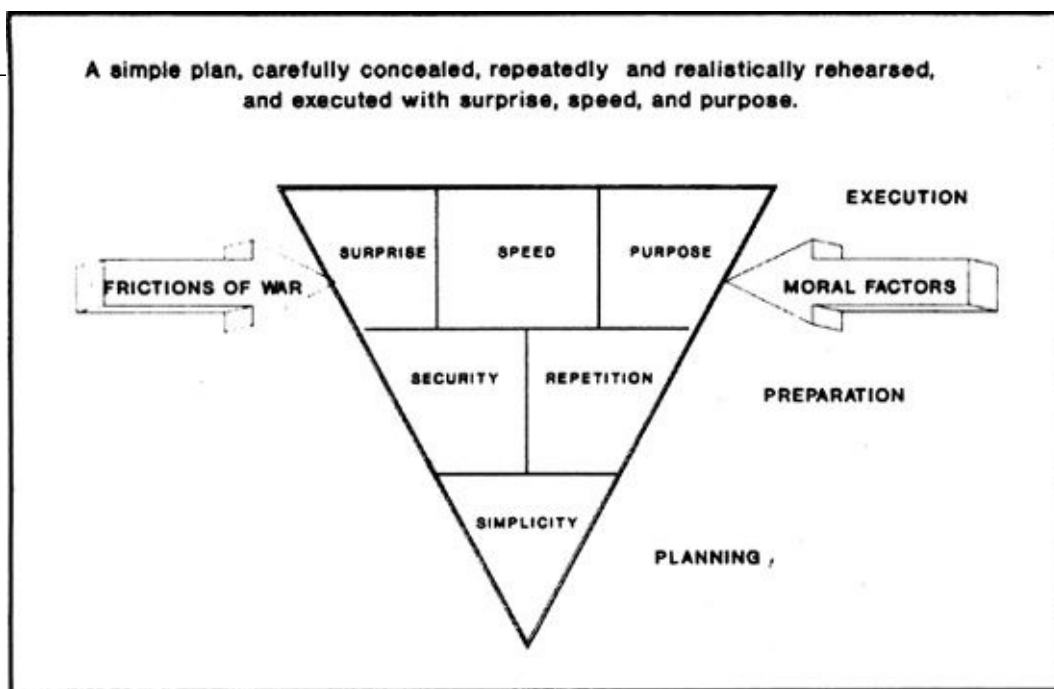


Fig. 1-2. The Special Operations Model

Simplicity

Simplicity is the most crucial, and yet sometimes the most difficult, principle with which to comply. How does one make a plan simple? There are three elements of simplicity critical to success: limiting the number of objectives, good intelligence, and innovation.

The political or military situation dictates the strategic or operational objectives of the mission, but the planners generally have the latitude to determine the tactical objectives as long as the two objectives coincide. Therefore it is essential to limit the number of tactical objectives to only those that are vital. For example, at the outset of World War II, Hitler ordered German commandos to seize the Belgian fort at Eben Emael to prevent the fort's 75mm and 120mm guns from destroying the nearby bridges and engaging the advancing German panzer division. Although there were nineteen fortified artillery positions (each with two to three guns), the Germans initially attacked only nine casemates. The remaining ten casemates were aimed south and were not a threat to the northern bridges or the panzers.

Conversely, while planning for the raid on Saint-Nazaire the British identified the Normandie dry dock as the principal objective with the South Lock gates and any accessible U-boats as the secondary and tertiary targets.⁹ However, as planning progressed the total number of major targets grew to eleven. By increasing the number of objectives from three to eleven, the assault force was required to add fifty more soldiers and over two hundred naval support personnel. Additionally, ten extra assault craft were added, more training was required, and the tactics had to be modified to accommodate these changes. Limiting the objectives to only what is essential focuses the training, limits the number of personnel required, reduces the time on target, and decreases the number of “moving parts.”

Good intelligence is the second element needed to develop a simple plan. Good intelligence simplifies a plan by reducing the unknown factors and the number of variables that must be considered. While preparing to rescue hostages from the Entebbe Airport, Israeli intelligence personnel were able to determine the number of terrorists and Ugandan guards, the

weaponry, and their general disposition. This information allowed the commander of the raid force, Brig. Gen. Dan Shomron, to reduce the size of his force to only what was necessary. This dramatically improved command and control and was essential to success. Prior to the raid on the fortress at Eben Emael, the Germans obtained engineering plans that provided a detailed description of the fort's emergency exits. This was necessary because if even a portion of the 650 Belgians inside the fort escaped, they could have overwhelmed the small German force. Armed with this knowledge, the glidermen, upon landing, quickly destroyed the emergency exits and eliminated the Belgians' capability to counterattack.

There will, however, always be gaps in the intelligence. The midget submarine crew that attacked the German battleship *Tirpitz* did not know how far the antitorpedo net extended below the water. At Son Tay, the raiders did not know exactly how many POWs there were or how many enemy guards were inside the camp. In both cases the operators heeded the words of Clausewitz: "Many intelligence reports in war are contradictory; even more are false and most are uncertain. What one can reasonably ask of an officer is that he should possess a standard of judgement ... He should be guided by the laws of probability."¹⁰

The submarine crew was prepared to cut through the net assuming that it extended to the seabed 120 feet below. Intelligence analysts studying the Son Tay camp projected the number of POWs and guards based on the number and size of the buildings. Both units built their plans around what was reasonable to expect.

The third element that contributes to simplicity is innovation. Innovation simplifies a plan by helping to avoid or eliminate obstacles that would otherwise compromise surprise and/or complicate the rapid execution of the mission. Innovation is normally manifested in new technology, but it is also the application of unconventional tactics. Fort Eben Emael was thirty miles from the German border. If surprise had been compromised, the Belgians would have had ample time to destroy the bridges crucial to the German advance. Airborne troops were unable to carry the heavy ordnance needed to destroy the casemates and parachute delivery would have produced too wide a troop dispersion. Hitler ordered Gen. Kurt Student to develop a gliderborne assault force to seize the fort. Although gliders were not a new technology, this was the first use of gliders during combat, and it surprised the Belgians long enough to allow the Germans to destroy the guns covering the bridges.

While training for the raid on the Son Tay POW camp in North Vietnam, Army Special Forces personnel had difficulty engaging targets at night. Even under the best circumstances "the accuracy of firing at night was roughly 35 percent."¹¹ Improving the accuracy was considered crucial to the rapid execution of the mission. Within a week of identifying the problem, Special Forces personnel found a commercially available low-light scope and accuracy rose to 95 percent.

In every case either new technology or innovative tactics were used to assist the assault element in reaching the objective and then quickly and effectively eliminating the enemy. Gliders, midget submarines, manned torpedoes, forward-looking infrared radar (FLIR) equipped C-130Es, and modified destroyers were all new or innovative technology specially designed or configured to defeat enemy defenses and achieve surprise. Shaped charges, Breaching guns, special demolitions, low-light scopes, Flash Stun grenades, and night-vision devices (NVDs) were all crucial to achieving speed on target.

Although the three elements of simplicity have their greatest impact during the execution

phase, they must be identified early to help craft the plan and make it as simple as possible.

Security

The purpose of tight security is to prevent the enemy from gaining an advantage through foreknowledge of the impending attack. However, the nature of special operations is to attack a fortified position. It naturally follows that, whether in war or peace, the enemy is prepared for an attack. Therefore it is not so much the impending mission that must be concealed as the timing and, to a lesser degree, the means of insertion. For example, the students who seized the American embassy in Tehran were expecting the United States to attempt a rescue. They had covered the open area with long wooden stakes to prevent the landing of helicopter or airborne forces. The battleship *Tirpitz*, although securely nestled six miles up the Soroy Sound in Norway, was protected with antisubmarine nets, antitorpedo nets, and antiswimmer devices to counter any subsurface attack. The four terrorists aboard Lufthansa flight LH181 knew that both Germany and Israel had counterterrorist units capable of quickly assaulting an airliner. The terrorists were armed with automatic weapons and grenades and could easily have prevented GSG-9 from entering the Boeing 737.

In most of the historical cases the enemy personnel at the targets were adequately prepared to defend themselves against just the type of attack that occurred. Nevertheless, the assaults were mainly successful. Why? Security on the part of the attackers prevented the enemy from knowing the time, and in some cases, the method of the attack, although it did not prevent the enemy from preparing for an assault. Special operations succeed in spite of defensive preparation on the part of the enemy. Security should be as tight as possible, without unduly impeding the preparation or execution of operations. It is important in achieving relative superiority because it prevents the enemy from gaining an unexpected advantage. The prevailing reason for the success of special operations is the ability of the attacking force to know what defenses the enemy has prepared. A failed security effort could result in the enemy preparing a surprise of his own and subsequently preempting the attack or reducing the speed on target, both of which would dramatically reduce the possibility of achieving relative superiority.

Repetition

In the preparation phase, repetition, like routine, is indispensable in eliminating the barriers to success. When the air force task group involved in the Son Tay raid first attempted to fly the UH-1H in formation with the C-130, they found flying in such a tight formation so difficult that it was not within the "capability of the average Army aviator." After hundreds of hours of flying the same profile, however, "the tactics of drafting with the ... UH-1 [were] proven and [could be] applied in future plans."¹²

General Joshua Shani, the lead C-130 pilot on the Entebbe raid, had only one opportunity to rehearse his short field landing prior to the mission, but to Shani it was not an issue. He said, "I had done hundreds of short field landings. They are part of basic training ... it was routine."¹³

Certain combat units, such as counterterrorist teams, strategic bombers, and SEAL delivery vehicle teams, perform standard mission profiles as a matter of routine. This routine hones those tactical skills to a degree that allows quick reaction to a threat, provided that threat fits

within the standard scenario for which the unit has been practicing. Most special operations, however, vary enough from the standard scenario that new equipment and tactics must be brought to bear on the problem. When this occurs it is essential to conduct at least one, and preferably two, full-dress rehearsals prior to the mission. The plan that sounded simple on paper must now be put to the test. The need for a full-dress rehearsal is borne out time and again. Invariably when a certain aspect of an operation was not rehearsed, it failed during the actual mission.

For example, the British had eighteen months to prepare for the attack on the German battleship *Tirpitz*. The mission called for the small dry submersibles, the X-craft, to be towed for eight days across the North Atlantic by conventional submarines. Towing was particularly taxing on the crews and therefore was only conducted for short durations during the rehearsals. On the actual towing operation the manila towline broke, one X-craft sank with the loss of all aboard, and one other was disabled beyond repair. Admiral Godfrey Plaice (commanding officer of X-7) commented, "If only we had towed the boats [X-craft] for the full eight days we might have known that the manila lines would break."^{14*} Repetition hones individual and unit skills, while full-dress rehearsals unmask weaknesses in the plan. Both are essential to success on the battlefield.

Surprise

The *Doctrine for Joint Special Operations* states that surprise is the ability to "strike the enemy at a time or place, or in a manner, for which he is unprepared."¹⁵ Yet in all the special operations examined, the enemy was entirely prepared to counter an offensive action. For example, at the Belgian fortress of Eben Emael, anti-aircraft guns were positioned on top of the fort to prevent an airborne assault; the port facility of Saint-Nazaire was ringed with shore batteries and spotlights to prevent British ships from sailing undetected up the Loire River; the German battleship *Tirpitz* and the British battleships HMS *Queen Elizabeth* and HMS *Valiant* were surrounded by antisubmarine and antitorpedo nets; North Vietnam had one of the densest air defense systems in the world; Benito Mussolini was guarded by 250 Italian soldiers; the POWs in Cab-anatuan were guarded by 223 Japanese soldiers; and the airport at Entebbe, Uganda, was surrounded by 100 Ugandan soldiers with two battalions close by. The enemy, in each of these cases, was prepared to prevent an assault on their position, and yet surprise was achieved in all instances.

Special operations forces do not generally have the luxury of attacking the enemy when he is unprepared. Such forces must attack in spite of enemy preparation. Surprise means catching the enemy off guard. This subtle difference is not mere semantics. Like two boxers in a ring, each is prepared to parry the other fighter's punches, but even with preparation, punches are landed. In a special operation surprise is gained through deception, timing, and taking advantage of the enemy's vulnerabilities.

Deception, when it works, either directs the enemy's attention away from the attacking force, or delays his response long enough for surprise to be gained at the crucial moment. For example, during the raid on Son Tay, the navy's Carrier Task Force 77 conducted a three-carrier diversionary strike that "served to deny the enemy the option of concentrating his attention [on the] true and primary mission."¹⁶ This diversion was highly successful. It allowed the heliborne raid force to penetrate North Vietnam's air defense and land

undetected in the POW camp. Deception that redirects attention can be risky, and when it fails to gain the appropriate response, it is usually disastrous. At Saint-Nazaire, the Royal Air Force was ordered to bomb the port city to redirect the Germans' attention away from the small armada of boats sneaking up the Loire River. Unfortunately, the air raid served only to heighten the Germans' alert posture and make complete surprise unattainable.

Although deception that redirected the enemy's attention worked well for the Son Tay raiders, in most special operations deception is best used to delay action by the enemy. For example, when the Israelis assaulted Entebbe Airport, they used a Mercedes sedan, similar to the one driven by Ugandan dignitaries, to momentarily delay action by the Ugandan guards. When Skorzeny landed at Gran Sasso to rescue Mussolini, he brought along a high-ranking Italian general. Skorzeny believed that the Italian general's "mere presence would probably serve to create certain confusion ... a sort of hesitation which would prevent them from resisting immediately or from assassinating the Duce."¹⁷ Skorzeny's assumption proved correct, and the additional confusion provided him with enough time to reach Mussolini. As several of the cases demonstrate, deception can be a useful tool in gaining surprise, but overreliance on deception should be avoided, and it is usually better to delay the enemy's reaction than to divert his attention.

The time of attack is a key factor in gaining surprise. Most attacking forces prefer to assault a target at night, primarily because darkness provides cover, but also because at night the enemy is presumed to be tired, less vigilant, and more susceptible to surprise. But nighttime frequently increases alertness and each mission should consider the ramifications of a night assault. Several of the most successful special operations were conducted in daylight and achieved a high degree of surprise. Skorzeny, for example, landed at Gran Sasso at 1400. He knew that the Italian guards would have just finished lunch and would be resting afterward. The Germans who attacked Eben Emael landed at first light. The morning light provided the gliders illumination to land, and many of the Belgian gun crews were still in the nearby town. The midget submarines that destroyed the *Tirpitz* also attacked in the morning. British intelligence had informed the submariners that the *Tirpitz's* sonar equipment would be down for repair during the morning of the attack. In special operations the enemy will be prepared; the question is, when will he be least prepared and what time of day most benefits the attacking force?

Every defense has a weak point. Gaining surprise means exploiting this weakness. Although the North Vietnamese had the most extensive air defense network in Asia, air force intelligence was able to find a five-minute gap in the radar's rotation cycle. This allowed the C-130 and the helicopters to insert the Son Tay raiders undetected into North Vietnam.

A similar problem was encountered by the British during World War II. The Royal Air Force had made countless attempts to sink the battleship *Tirpitz* from the air. The battleship, which was anchored in Kaafjord, Norway, was protected by anti-aircraft batteries, and the ship's self-protection included sixteen 4.1-inch, sixteen 37mm, and eighty 20mm anti-aircraft guns. Additionally, most of the ship was encased in 12-inch armor. However, the weak point of the vessel was its thinly covered keel. It was here, at the soft underbelly, that the British chose to attack. Surprise was gained by two midget submarines (*X-6* and *X-7*) when they penetrated the German defenses and dropped their explosives. In the case of the *Tirpitz*, weakness in defense was a relative term. The Germans did have several antisubmarine air

antitorpedo defenses; however, compared to their anti-aircraft defenses, the submarine defenses were considerably weaker.

Many tacticians consider the principle of surprise to be the most important factor in a successful special operation. They mistakenly believe that it is surprise that gives them the decisive advantage over the enemy, as if merely catching the enemy unprepared would assure the attacking force of victory. This is not the case. Surprise is useless and indeed unachievable without the other principles. What good would it do to surprise the enemy, only to be ill-equipped to fight him? Relative superiority is gained only through the correct application of all the principles. Surprise is essential, but it should not be viewed in isolation. It is only valuable as part of the complete pyramid of principles.

Speed

In a special operations mission, the concept of speed is simple. Get to your objective as fast as possible. Any delay will expand your area of vulnerability and decrease your opportunity to achieve relative superiority.

Speaking of war in general, the *Fleet Marine Force Manual (FMFM 1-3)* states, "As with all things in war, speed is relative."¹⁸ This statement by *FMFM 1-3* may be true in conventional or large-scale warfare where the forces on a battlefield maneuver and adjust to certain tactical advances, but in special operations the enemy is in a defensive position and his only desire is to counter your attack. Therefore, the enemy's will to resist is a given, and his ability to react is constant. Consequently, over time the frictions of war work only against the special operations forces and not against the enemy. It is essential, therefore, to move as quickly as possible regardless of the enemy's reaction.

For example, in the two cases involving submarine attacks, the British X-craft raid on the *Tirpitz* and the Italian manned torpedo attack on the British fleet in Alexandria, the attacking forces were completely clandestine in their approach. The enemy was unaware of their presence and therefore was not trying to counter the will of the attacking force. Nonetheless, speed was not relative; it became a critical factor in mission success. The X-craft midget submarines, which had transited the North Atlantic two days earlier, began to have catastrophic failures in their electrical and ballast systems. As each minute passed, the ballast and trim of one midget submarine became increasingly worse, causing it to list fifteen degrees to port. Time became such a factor that the submarine commander, Lt. Don Cameron, decided not to cut clandestinely through the antitorpedo net but to surface and make a mad dash for the *Tirpitz*. This action was taken at great risk to the mission's success, but Cameron clearly realized that time, not the Germans, was now his worst enemy.

The Italian frogmen who entered Alexandria Harbor on manned torpedoes were constantly exposed to the cold water. They knew that even if the enemy didn't discover them, the force of nature and physical exertion would overcome them. As he closed in on the British battleship *HMS Valiant*, Lieutenant Durand de la Penne recalled, "I am tormented by thirst ... I cannot continue working from the extreme fatigue and for the breathlessness."¹⁹ He knew that "speed was essential ... [if he were forced to surface from fatigue] the alarm would be given, depth charges would be dropped, and [the] operation ... would be doomed to failure."²⁰ But because Durand de la Penne worked quickly, he was not discovered until after he had surfaced. Hours later the warhead from the manned torpedo exploded and the

HMS *Valiant* sank in Alexandria Harbor. In both of these cases, the enemy was not a factor but time was still working to prevent a successful outcome.

Most special operations involve direct, and in most cases immediate, contact with the enemy, where minutes and seconds spell the difference between success and failure. Of the successful missions analyzed in this book, only in the Saint-Nazaire raid did the attacker take longer than thirty minutes to achieve relative superiority from the point of vulnerability. In most of the other cases, relative superiority was achieved in five minutes and the missions were completed in thirty minutes.*

In order to gain surprise and speed, special forces are generally small and lightly armed and therefore they are unable to sustain action against a conventional enemy for long periods of time. The raid on Saint-Nazaire illustrates the problems that arise when special forces attempt to prolong the engagement. When the number of objectives at Saint-Nazaire increased from three to eleven, the operation required additional time ashore for the commandos to destroy these targets. In a draft memorandum to the chiefs of staff of Operation Chariot, the Combined Operations Command adviser stated that in order to achieve all the objectives, "the whole force ... [would require] a maximum period ashore of two hours."²¹ What advantages the commandos gained in surprise they lost in execution, by actually planning an operation that took two hours of sustained action. This required the lightly armed, and in some cases unarmed, force to fight against a heavily armed German flank brigade of three hundred soldiers. Clausewitz warns: "The more restricted the strength the more restricted the goals must be; further, the more restricted the strength, the more limited the duration."²² Also during this two-hour period, the seventeen motor launches that had delivered the commandos to Saint-Nazaire were exposed to withering shore fire and within ninety minutes almost all of them were destroyed or had retreated. Had the commandos struck quickly and extracted, the probability of mission completion would have increased dramatically.

Speed in a special operation is a function of time, not, as some imply, a relative factor that is affected by the enemy's will to resist. As I will demonstrate later, relative superiority can be gained, despite the efforts of the enemy, primarily because the attacking force moves with such speed that the enemy's reaction is not an overriding factor.

Purpose

Purpose is understanding and then executing the prime objective of the mission regardless of emerging obstacles or opportunities. There are two aspects of this principle. First, the purpose must be clearly defined by the mission statement: rescue the POWs, destroy the dock, sink the battleship, etc. This mission statement should be crafted to ensure that in the heat of battle, no matter what else happens, the individual soldier understands the primary objective. For example, during the X-craft raid on the battleship *Tirpitz*, the midget submarine X-6 was suffering from major equipment casualties (the attack periscope was broken, the port demolition charge was flooded, the main casing was leaking, and the midget submarine had a fifteen-degree port list), and the commander, Lt. Don Cameron, had to make the decision whether or not to attack. It was conceivable that by attacking and failing, he could compromise the success of the other two X-craft also assigned to attack the *Tirpitz*.^{*} After mentally reviewing the purpose of his mission, as defined by his operational orders, Cameron

made the decision to attack. His orders were clear. If the X-craft was still under power and equipped with at least one side charge, then Cameron was directed to complete the mission.

During the assault on the British fleet in Alexandria Harbor during World War II, the Italian frogmen, Gunner Captain Vincenzo Martellota and his swim partner, Petty Officer/Diver Mario Marino, positioned their manned torpedo underneath a large British cruiser before realizing that it was the wrong target. Martellota and Marino had risked their lives avoiding picketboats, depth charges, and pier security, and although sinking the cruiser would have been acceptable, it was not the vessel they were assigned to attack. Martellota subsequently backed away from the ship and continued on. Eventually the Italians reached their assigned target, a large oil tanker. By following their orders, Martellota and Marino not only sank the large tanker, but also severely damaged a destroyer tied alongside. In both the British and Italian cases, the men had clearly defined orders that directed their actions in the heat of battle and focused their efforts on what was important.

The second aspect of the principle of purpose is personal commitment. Lt. Col. Henry Mucci, who commanded the 6th Ranger Battalion and rescued 512 POWs from a Japanese death camp, understood the need for personal commitment. Before the operation he told his Rangers, “You had better get down on your knees and pray! Damn it ... don’t fake it! I mean ... PRAY. And, I want you to swear an oath before God ... Swear you’ll die fighting rather than let any harm come to those POWs!”²³

Similarly, Gen. Joshua Shani, the air commander at Entebbe, stated several years after the raid, “We were absolutely committed to seeing the task completed ... We were fighting for Israel.”²⁴

The purpose of the mission must be thoroughly understood beforehand, and the men must be inspired with a sense of personal dedication that knows no limitations. Captain Otis Skorzeny once said, “When a man is moved by pure enthusiasm and by the conviction that he is risking his life in a noble cause ... he provides the essential elements for success.”²⁵ In an age of high technology and Jedi Knights we often overlook the need for personal involvement, but we do so at our own risk. As Clausewitz warned, “Theorists are apt to look on fighting in the abstract as a trial of strength without emotion entering into it. This is one of a thousand errors which they quite consciously commit because they have no idea of the implications.”²⁶

The principles of special operations defined above are not merely derivatives of the army principles of war. They represent unique elements of warfare that only special forces possess and can employ effectively. The next section describes the methodology used to develop these principles.

To further explain the theory of special operations, I will present eight historical cases and provide an analysis of each. The cases span the entire spectrum of special operations from global conventional war to peacetime engagement. They include missions conducted by United States, British, German, Israeli, and Italian forces, executed from the sea, air, and land. My approach to multiple mission analysis was fostered by the British military philosopher B. H. Liddell Hart, who said, "The method in recent generations has been to select one or two campaigns, and to study them exhaustively as a means of professional training and as the foundation of military theory. But with such a limited basis the continuous changes in military means from war to war carry the danger that our outlook will be narrow and the lessons fallacious."²⁷ Although eight cases are not definitive, they are sufficient to demonstrate the validity of the theory and show how the principles of special operations help reduce the frictions of war and allow the attacking force to achieve relative superiority.

I conducted interviews with key participants, and, when possible, visited the actual sites where the operations occurred. In seven of the eight cases presented, the Mussolini event being the exception, I was able to interview personnel intimately involved with the mission. This was unquestionably the most rewarding aspect of my work. These individuals provided personal insight into the success or failure of the mission and helped me formulate my theory in a clear, concise manner. They also verified facts, corrected errors in documentary sources, provided original documentation and photos, and in many cases, edited my rough drafts. Where I could not confirm a salient fact by interview or official report, I ensured that at least three secondary sources were in agreement on the point. It is from this original research that the principles of special operations, which subsequently led to the understanding of relative superiority and the development of the theory, were derived.

Each of the cases is loosely divided into six sections: the background, which provides the military or political justification for the operation; the objective, including a detailed look at the target and the enemy order of battle; the commandos, a history of the units (where available) and biographies of key personnel who led the missions; the training or preliminary events; the mission, including a description of the events during the engagement; and a final analysis of the operation.

The analysis begins with an essay on the outcome of the mission, which is followed by a series of questions designed to flesh out the merit of the plan and its subsequent execution. These questions are as follows: Were the objectives worth the risk? Risk in this context applies not only to loss of human lives but also to loss of military or political advantage. If the risks are considered acceptable, was the plan developed to achieve maximum superiority over the enemy and minimize the risk to the assault force? If the plan was sound, was the mission executed in accordance with the plan, and if not, what unforeseen circumstances dictated the outcome of the operation? Finally, what modifications to the plan and the execution could have improved the final results? The analysis also includes a relative superiority graph followed by an examination of the six principles of special operations.

The next eight chapters will present the case studies discussed above in great detail. The analysis of these cases will show that relative superiority, although an abstract concept, does exist and that the theory of special operations is a powerful tool to explain victory and defeat.

Notes

1. Joint Chiefs of Staff, *Joint Publication 3–05 (Test): Doctrine for Joint Special Operations* (Washington, D.C.: Office of the Joint Chiefs of Staff, 1990).
2. Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, N.J.: Princeton University Press, 1976), xxx, 358.
3. *Ibid.*, 194.
4. *Ibid.*, 159.
5. The Holloway Commission, “Rescue Mission Report,” in *The Iranian Rescue Mission* (Washington, D.C.: Department of Defense, August 1980), 58.
6. *Ibid.*, 59.
7. Clausewitz, *On War*, 198.
8. Thomas Gallagher, *The X-Craft Raid* (New York: Harcourt Brace Jovanovich, 1971), 20.
9. H.M.S.O., *Combined Operations: The Official Story of the Commandos* (New York: Macmillan, 1943), 72.
10. Clausewitz, *On War*, 183.
11. Lt. Gen. Leroy J. Manor, interview by Dr. John Parton and Maj. Dick Meadowcroft, Tampa, Fla., 23 February 1988.
12. Commander, JCS Joint Contingency Task Group, *Report on the Son Tay Prisoner of War Rescue Operation*, Part I (Washington, D.C.: Office of the Joint Chiefs of Staff, 1970), part I, E-61, E-54.
13. Gen. Joshua Shani, interview by author, tape recording, Washington, D.C., 19 January 1993.
14. RAdm. Godfrey Place, V.C., interview by author, tape recording, Sherborne, Dorset, England, 18 June 1992.
15. JCS, *Doctrine for Joint Special Operations*, E-5.
16. JCS, *Report on Son Tay*, iv.
17. Otto Skorzeny, *Skorzeny’s Secret Mission*, trans. Jacques Le Clercq (New York: E. P. Dutton, 1950), 87.
18. Department of the Navy, *Fleet Marine Force Manual (FMFM) 1–3 Tactics* (Washington, D.C.: Department of the Navy, 1991), 63.
19. Luigi Durand de la Penne, “Report on Operation G.A.3: The Attack on HMS *Valiant*,” in Dott. Carlo de Risio, compiler, *I Mezzi d’Assalto* (Rome: Ufficio Storico della Marina Militare, 1991). The report was translated for the author by Lt. Comdr. Paolo Gianetti of the Italian Navy.
20. Juilo Valerio Borghese, *Sea Devils*, trans. James Cleugh (Chicago: Henry Regner, 1954), 148.
21. Advisor on combined operations, “Draft Memorandum to the Chiefs of Staff: Operations ‘Chariot,’ ” Imperial War Museum.
22. Clausewitz, *On War*, 283.
23. Forrest B. Johnson, *Hour of Redemption: The Ranger Raid on Cabanatuan* (New York: Manor Books, 1978), 171.
24. Shani, interview.
25. Skorzeny, *Secret Mission*, 24.
26. Clausewitz, *On War*, 138.

*The *Doctrine for Joint Special Operations* [Joint Pub 3-05] defines special operations as

operations conducted by specially organized, trained, and equipped military and paramilitary forces to achieve military, political, economic, or psychological objectives by unconventional military means in hostile, denied, or politically sensitive areas. These operations are conducted during peacetime competition, conflict, and war, independent or in coordination with operations of conventional, non special operations forces. Politico-military considerations frequently shape special operations, requiring clandestine, covert, or low visibility techniques and oversight at the national level. Special operations differ from conventional operations in the degree of physical and political risk, operational techniques, modes of employment, independence from friendly support, and dependence on detailed operational intelligence and indigenous assets.¹

† *Joint Pub 3-05* states that direct action missions are “designed to achieve specific, well defined, and often time-sensitive results of strategic, operational, or critical tactical significance.” They involve attacks on critical targets, interdictions of lines of communication, location, capture, or recovery of personnel or materiel, or the seizure, destruction, or neutralization of critical facilities.

*Initially the cases were viewed in terms of the U.S. Army’s principles of war as defined in the *Doctrine for Joint Special Operations*. After careful examination of these cases, some of the principles of war were eliminated or modified to more accurately reflect their relationship to a special operation. The army’s principles include: objective, offensive, mass, economy of force, maneuver, unity of command, security, surprise, and simplicity.

*There were two types of line used, manila and nylon. Because the manila line had not been tested for the full eight days the mission was no way of knowing it would part under actual conditions.

*There were some cases—i.e., the raid on the Cabanatuan POW camp, the Son Tay raid, and Skorzeny’s rescue of Mussolini—where the mission was not over until the return trip was complete.

*X-10, commanded by Lt. Ken Hudspeth, was assigned to attack the *Scharnhorst*, a German cruiser located just a mile from the *Tirpitz*. Hudspeth found himself in similar mechanical difficulty, but his orders clearly forbade him to attack if it could compromise the destruction of the primary target, the *Tirpitz*.

*Although I was unable to interview any of the commandos who participated in the Mussolini event, I did visit Gran Sasso where Mussolini was held prisoner and reviewed in depth Lt. Col. Otto Skorzeny’s original (German version) summary of the event.

The German Attack on Eben Emael, 10 May 1940

BACKGROUND

In January 1933, Adolf Hitler was appointed chancellor of Germany. His rise to power was fueled by his promise to avenge the defeat of World War I and the humiliating Treaty of Versailles. By 1935 Hitler had completely rejected the Armistice of 1918, which limited German arms production. He began to build the most powerful army in Europe, and by the late 1930s there was little doubt the German army was preparing for war.

The small country of Belgium had long been considered a primary axis for a German invasion into France. Before World War I, the chief of the German General Staff, Count Alfred von Schlieffen, developed a plan calling for the encirclement of France by two avenues of approach, through the Swiss Alps and across Belgium. Little had changed during the interwar years to warrant a major modification to the Germans' Schlieffen Plan. The French and Belgians were keenly aware of their geographical predicament. However, cutbacks after World War I significantly reduced the size and effectiveness of both armies and fostered a reliance on defensive warfare. This defensive mentality was manifested in France's Maginot line and Belgium's Albert Canal defenses.

The Maginot line was a system of fortifications built along the eastern French border in the 1930s. It extended from Switzerland to Belgium. The Belgians constructed a similar defensive perimeter along the Albert Canal. The linchpin of their fortifications was the largest single fort of its day, Eben Emael. Between the Albert Canal and the Maginot line stood the massive Ardennes Forest, a seemingly impregnable obstacle for an advancing army. With these fortifications in place the French and British positioned their armies in northern France to take advantage of the only logical German avenues of approach.

The German commander in chief, Gen. Walther von Brauchitsch, and his chief of staff, Gen. Franz Halder, both felt that a German advance must outflank the Maginot line and concentrate the *Schwerpunkt* (point of the spear) of the attack north of the impassable Ardennes Forest. This would take the bulk of the German army through Holland, then Belgium. A smaller but relatively strong force would attempt to negotiate the Ardennes and cross the Meuse River between Givet and Sedan in eastern France. Although this was the predictable approach, Brauchitsch and Halder were counting on surprise and the superiority of German forces to rout the enemy.

This plan met with exceptional criticism from two prominent German generals, Erich von Manstein (chief of staff, Army Group A) and Heinz Guderian (XIX Panzer Corps commander). Guderian proposed driving three panzer corps through the Ardennes, across the Meuse, and deep into the heart of France. This would allow the Germans to flank the Allied forces, who were expecting the main thrust to come across Belgium. "Before the attack could succeed," wrote historian Charles Kirkpatrick, "the French mobile forces, along with their British allies, had to be decisively engaged in battle elsewhere, so that they could not swiftly intervene

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