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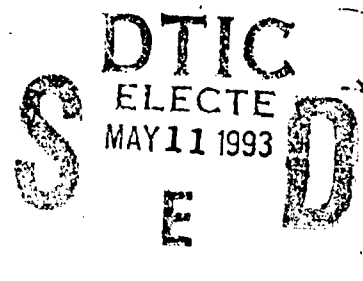
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DECISIVE FACTORS IN THE GULF WAR FROM THE IDF LESSON LEARNING PERSPECTIVE

BY

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Israel Defense Forces

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The Gulf War was a laboratory for modern conventional warfare. However, from the Israeli perspective, the war is perceived as a "luxury" war. The Americans had unlimited time to gather forces and had the ability to dictate the time and location of the battle. This study examines the decisive elements of the war, including an analysis of the objectives of the U.S. led coalition, a review of the strengths and weaknesses of the Iraqi forces and the coalition forces, and an analysis of the interrelationships between these strengths and weaknesses. It further analyzes the air and ground phases of Operation Desert Storm with particular emphasis on the reasons for the American success. The study considers the differences between the conditions under which the war took place and the conditions under which the Israel Defense Forces operate. By way of example, the study notes that the U.S. possesses the world's greatest economy, and with the financial assistance of the world's other great economic powers, was able to bring almost unlimited resources to bear. In contrast, Israel lacks the financial resources for such a campaign. Additionally, the U.S. forces had strategic depth in the event of an Iraqi offensive. Because of the location of its population centers, Israel cannot permit an enemy to cross its borders. Nevertheless, as set forth in the Summary and Conclusion of this study, many lessons can be learned by the Israel Defense Forces from the Gulf War.

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**DECISIVE FACTORS IN THE GULF WAR FROM THE
IDF LESSON LEARNING PERSPECTIVE**

AN INDIVIDUAL STUDY PROJECT

by

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Introduction

The Gulf War is perceived in Israel as a "luxury" war. The Americans had unlimited time to gather forces and the ability to dictate the time and location of the battle. Why, then, should it concern Israel, a country of a different size, which stands alone opposite an Arab coalition?

Dave Atkinson, author of the "Long Gray Line", who covered the Gulf War for the Washington Post, provides part of the answer in the following paragraph:

There is a tendency to believe that the victory (in the Persian Gulf) was an easy and cheap one. The truth is that in terms of American losses and national budget that was expended we were lucky, but it was not easy. The seeds of this victory were sown twenty years ago in the jungles of Vietnam. The officers that commanded brigades, divisions and corps in this war, commanded platoons, companies and battalions in Vietnam. Those officers stayed on in the military after Vietnam, when the army was an institution tormented and rent apart by drug anarchy, racism and lack of discipline. They stayed loyal to the military establishment and started putting things right, developing doctrines, training methods and professional measures that were developed into the extraordinary force that they originally joined. In this sense, the Gulf War lasted not forty-two days, but twenty years. And that was not easy.

Despite all legitimate words of caution and reserve concerning the learning of lessons by the Israel Defense Force from the Gulf War, there is no doubt that it was a "laboratory", as close as one could get to conditions of a modern conventional war. From here derives the importance of understanding the concentration of forces and the phases of the war, as well as

lessons learned from the war through American eyes, and the examination of possible resulting effects on the IDF.

This paper will deal with the classical dilemma of how to obtain the maximum maneuver and fire abilities from the decisive elements, and in deducing lessons relevant to the IDF.

This paper is based on the work of an IDF lessons team headed by Brig. Gen. Shlomo Yanai and Brig. Gen. Shlomo Naveh, the memoirs of General H. Norman Schwarzkof, the Commander of the operation, and responses to questionnaires distributed by the author to students at the U.S. Army War College who actively served in the war. (See Appendix A.)

The paper will not deal with details of all the phases of the fighting, but rather with the principal and influential factors in terms of decisive elements.

The Background to the War

On August 2, 1990, at 02:00 hours local time, the Iraqi Army invaded Kuwait. Nine hours later, it captured Kuwait's capital and other key positions throughout the country, and forced the world to face a fait accompli. A week later, on August 8th, the President of Iraq, Saddam Hussein, announced the annexation of Kuwait.

Iraq presented this annexation as the rectification of an historical injustice made by the British in 1913, when they "tore" away this oil rich district from Iraq and installed a family of sheiks to govern it.

The capture and annexation of Kuwait almost doubled Iraq's oil reserves from 13.54% to 21.54% of the world's oil resources. For the first time in its history Iraq had control of over 500 km. of coastline with a port, Kuwait City, on the Persian Gulf.

It did not take long for America to react. On August 2nd, James Baker, U.S. Secretary of State, went to Moscow in order to coordinate the two nations' positions. On the same day a joint message was released by the two powers demanding the immediate and unconditional Iraqi withdrawal from Kuwait. At the same time, the Soviet Union announced a cessation of all arms and equipment supplies to Iraq, while the U.S. requested that the member countries of the United Nations impose a financial embargo on Iraqi exports, including oil, and freeze all Iraqi assets in

their countries. From then onwards, the Soviet Union's activities were mainly passive, while the United States took upon itself the mission of leading the struggle against Iraq under the auspices of the United Nations.² Cooperation was established among all the permanent members of the Security Council. Thirty six nations provided forces for either the naval embargo effort or the war itself. Others provided equipment or financial aid to the front line countries or the coalition members.

The foreign participation in the effort alone amounted to guarantees to transfer 50 billion dollars to cover the greater part of U.S. expenses during the Gulf War.

The concentration of U.S. and international forces in response to the Iraqi invasion of Kuwait and the actual war that followed in January and February were among the largest international and military events to have taken place since World War II.

Objectives of the War

1. Strategic and National Objectives of the Gulf War - formulated by the President of the United States, as the commander-in-chief of the armed forces, were:
 - a. Unconditional withdrawal/retreat of Iraqi forces from Kuwait.
 - b. Return of the legitimate Kuwaiti government.
 - c. Security and stability in the Persian Gulf.
 - d. Protection of American citizens in the area.
2. Military Objectives - Operation "Desert Storm"
The military objectives were defined by the U.S. Joint Chiefs of Staff (JCS), based on the national objectives and the directives of the Secretary of Defense.
 - a. Neutralization of the Iraqi command's ability to execute military operations.
 - b. Removal of Iraqi forces from Kuwait, and destruction of the Iraqi offensive ability, with emphasis on the Republican Guard forces placed in Kuwait.
 - c. Destruction of nuclear, biological and chemical warfare production capability.
 - d. Return of the legitimate regime to Kuwait.³

3. Missions assigned to Commander, Central Command (CENTCOM) General Norman Schwarzkopf during the crisis:
 - a. To deploy the allocated forces to the campaign area: Saudi Arabia
 - b. To act in coordination with Saudi and other allied forces.
 - c. To protect Saudi Arabian territory from Iraqi attack.
 - d. To be prepared to direct other campaign activities as needed.
4. When the political option of deterring Iraq into withdrawing from Kuwait failed, additional missions were assigned.
 - a. To strike at the Iraqi fighting ability.
 - b. To remove the Iraqi forces from Kuwait.
 - c. To assist in returning the legitimate Kuwaiti government to power.⁴
5. The limitations and constraints set by the Administration:
 - a. To achieve the war's objectives with a low level of casualties in order to preserve the consensus of the American public.
 - b. Objectives must be achieved within a prescribed time limit.
 - c. The CINC of CENTCOM was given the mission of directing the military campaign, using as wide a coalition as possible, especially allied Arab states.⁵

The Iraqi Army

During the war with Iran, the Iraqi army was transformed from a defense force comprised of four corps to an offensive force comprised of eight corps, capable of directing wide range of operations to a depth of over 100 km into Iran.

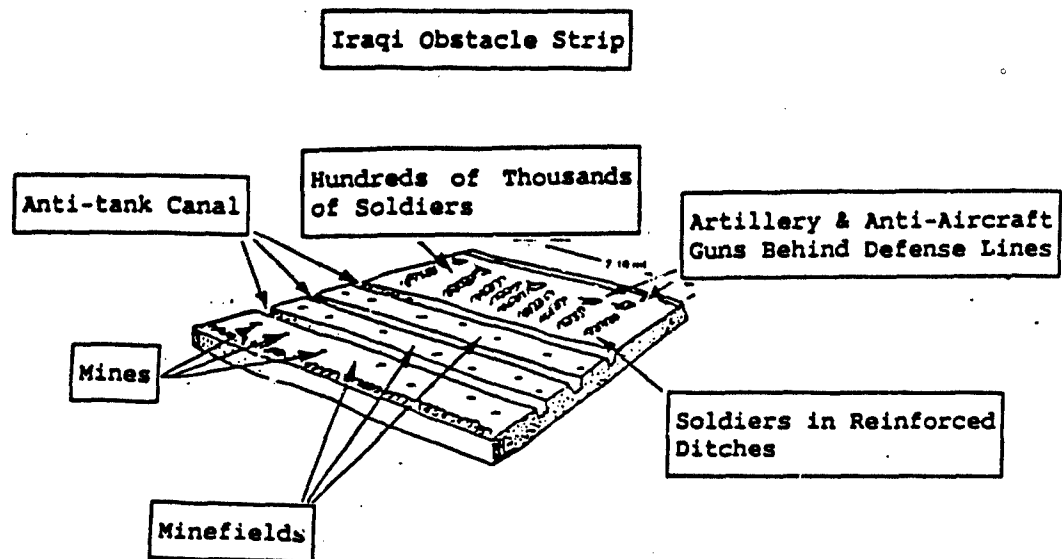
At the time of the invasion of Kuwait, the Iraqi arsenal included numerous T-72 and other models of Soviet tanks and advanced artillery manufactured in France, Austria and South Africa. Iraq equipped itself with the latest Soviet aircraft: MIG-29, Sukhoi 27 and French Mirage F-1's. Iraqi pilots were capable of executing bombing sorties against enemy facilities at a range of 1,000 km. as a result of aerial refuelling capabilities. Iraq had chemical warfare capabilities and, in all likelihood, the ability to mount chemical and even biological warheads on their SCUD missiles. Its modern air defense system was structured in many layers and included a spotting system, automatic command and control, 700 SAM launchers, 6,000 anti-aircraft guns and an air force consisting of 550 fighter planes.

Iraq emphasized the development of a secure communications system including a backup for its military communications (if one system were hit, other systems would take its place). Microwave and optic net fibre systems were constructed. A large part of this system was underground.

After the occupation, in October 1990, Saddam Hussein had 300,000 soldiers deployed in Kuwait in deep fortified trenches and protection lines. In January 1991, the number of soldiers deployed was increased to 500,000. Along the Kuwait border with Saudi Arabia two defense strips were constructed with triple strength fortified defense lines. Minefields and ditches filled with gasoline were constructed, dominated by tank posts, artillery and machine guns. In addition, three million mines

were laid. Heavy mobile armored forces were established to strike against any coalition forces which succeeded in penetrating the first lines of defense.

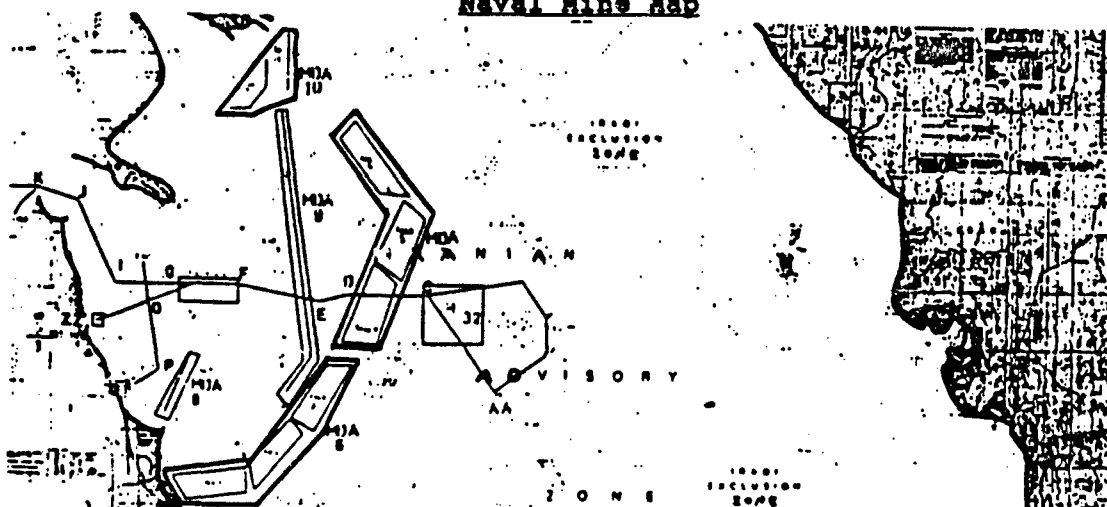
[Diagram 1⁶]



Similar fortifications were constructed along the shores of Kuwait, which were also protected by naval minefields.

[Diagram 2⁷]

Naval Mine Map



The Iraqi force layout included:

Eight regiments of which seven were sector units, and one armored mobile regiment of Republican Guards.

66 divisions, including:

- * Eight armored divisions;
- * Three mechanized divisions;
- * A Special Forces division;
- * 54 infantry divisions;

Weapons

1. Ground
 - * 6,000 tanks
 - * 5,000 armored troops vehicles
 - * 5,000 artillery pieces
2. Air
 - * 650 fighters and bombers
 - * 250 transport helicopters
 - * 150 attack helicopters
3. Misc.
 - * 300 Surface to Air Missile batteries
 - * Hundreds of SCUD missiles

Of these forces, some thirty divisions, half a million soldiers and about 1,200 tanks were concentrated in Kuwait.⁸

Coalition Forces

1. The U.S. Central Command (CENTCOM)

This joint task force command for rapid deployment was established on March 1, 1980 in response to the Soviet invasion of Afghanistan and the Khomeini revolution in Iran. In 1983 the command became the U.S. Central Command, directly under the control of the Secretary of Defense. In peace time CENTCOM has no forces of its own, so that to respond to the crisis, it was necessary to gather American forces via air and sea from a distance of 12,500 km.

The XVIII Airborne Corps was the first to be brought in to support the operation and was joined by the U.S. III Corps and the First Marine Expeditionary Force. During Operation Desert Storm, CENTCOM controlled some 400,000 ground soldiers, 1,300 fighters and bombers, 1,100 helicopters and over 200 war ships. These forces provided it with absolute air and sea supremacy.

Total allied force layout

Equation table relative to main ground forces.⁹

	Iraq	Allied	Relativity
Tanks	4,480	3,042	1.5:1
Artillery	3,110	1,600	1.9:1

2. Main Allied Forces in the Persian Gulf¹⁰

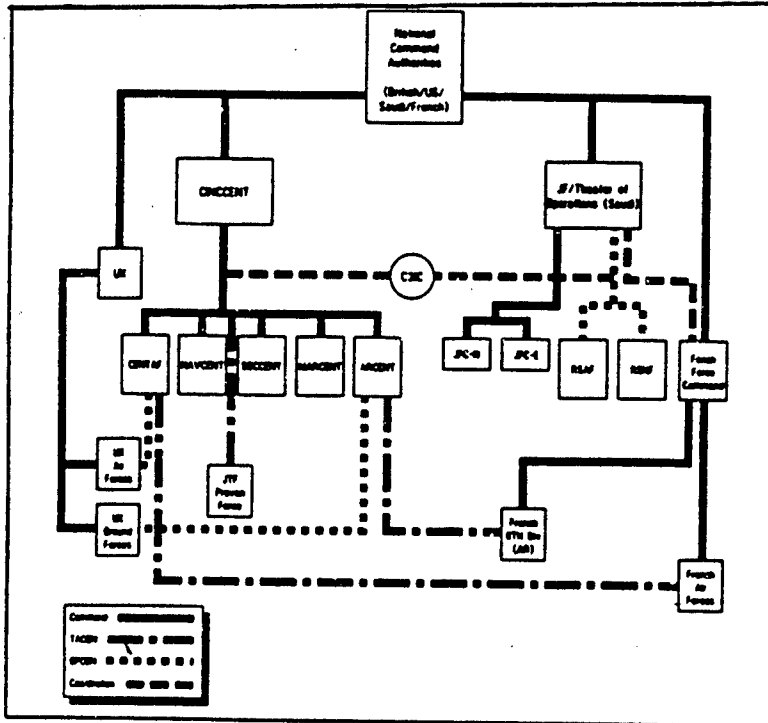
Country Force	U.S.	Egypt	Britain	Syria	Saudi Arabia	France	Total	Iraq in the South
Soldiers	440,000	35,000	25,000	20,000	20,000	15,000	555,000	500,000
Planes	1,400	20	55		130	75	1,680	450
Tanks	2,900	600	285	300	200	200	4,485	3,600

3. The Command, Control and Coordination

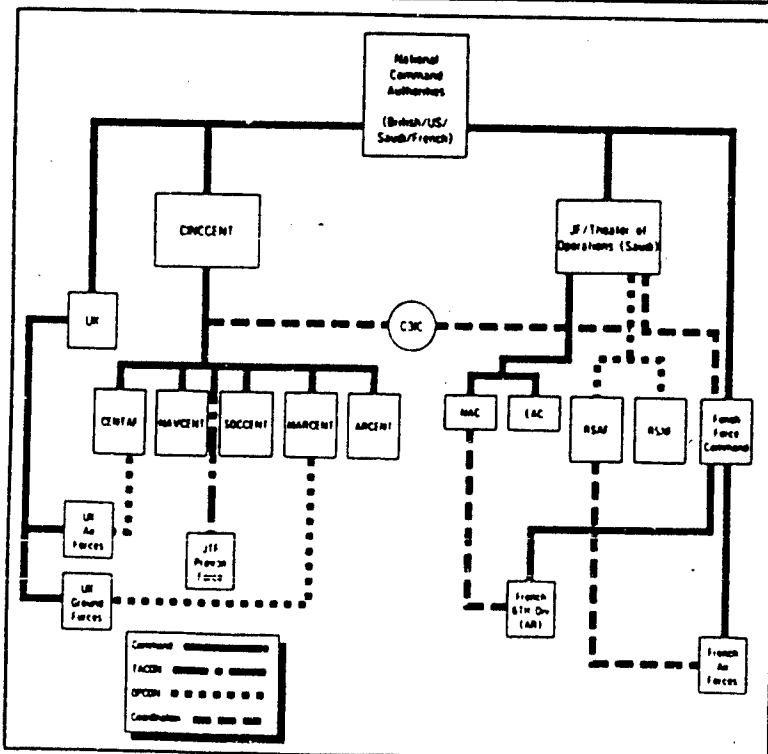
According to the operational plan, the allied ground forces were united as five task forces drawn up from west to east as follows: the XVIII Airborne Corps, the VII Corps, the Egyptian Joint Force Command, the Marine Expeditionary Force, the Saudi Joint Force Command.

The ground forces supreme commander was General John Wausek of the U.S. Army. Saudi General Haled Abu-Sultan Abdulla Aziz was in overall command of the Arab allies. An American Liaison Officer coordinated operational activity for each regiment.

[Diagram 3 "']



Operation Desert Storm
Coalition Command Relationships.



Operation Desert Shield
Coalition Command Relationships.

Advantages and Disadvantages of the Two Armies

The overall planning of the offensive was based on taking advantage of coalition strong points compared to the Iraqi army's weaknesses.

Analysis of Allied Forces Advantages and Disadvantages ¹²

Advantages	Disadvantages
* High quality air, sea and ground forces: well-trained personnel, employing advance technology * Ability to gain air supremacy at an early stage. * Advantage in obtaining intelligence throughout the arena including space access. * International support. * High level political and military leadership.	* Many diverse national forces. * Numeric inferiority during first phase * Foreign environment, well known to enemy. * Lack of confidence due to unclear Iraqi intentions as to use of weapons of mass destruction. * Wide deployment. * Long supply lines.

Analysis of Iraqi Army Advantages and Disadvantages ¹³

Advantages	Disadvantages
* Unity of command. * Knowledge of the area. * Organizational ability. * Large, well dug-in army. * Deep fortifications system covering both land and sea. * Impressive road network, that could not be blocked. * Underground supply system, sufficient for approximately one month of warfare.	* Hierarchic control system without autonomous operational abilities. * Air defense that could be "surprised" by EW and attacks by F-117 bombers. * Ground forces and logistics layouts vulnerable to air attacks under desert conditions. * Disorganized logistics layout, despite early preparations. * Static basic defense perception. * Limited air attack ability. * Limited intelligence gathering ability. * Lack of ability to attack U.S. space platforms. * Misunderstanding of coalition forces operational abilities.

Main Operational Problems as Defined by General Schwarzkopf ¹⁴

1. First and foremost: how to achieve ground attack maneuver against ground forces with a significant quantitative advantage, supported by a deeply layered operative layout, supported by a complex fortification and obstacle layout.
2. How to concentrate and contain the main Iraqi ground forces into a defined geographic layout. This situation would permit total and overall control of Iraq's main ground forces, and would prevent disturbances and surprises from the western flanks to the forces fighting to liberate Kuwait. This would permit debilitation and paralysis of the Iraqi forces and prevent a war of attrition.

3. Attrition implementation method, definition of interaction between attrition and maneuvers.
The Iraqi army had a quantitative advantage and was well fortified. The problem was how to debilitate it and achieve a situation that would permit the implementation of ground maneuvers with high success rate prospects. With what should the debilitation be executed? In what way? For how long?
4. How to strike a rapid and decisive blow by a joint maneuver that would destroy the Iraqi network of forces.
A combination of maneuver and attrition. Attrition in order to permit a rapid and simple tactical maneuver to prevent complications and casualties.
5. How to prevent the Iraqis from discovering allied positions, movements and intentions.
6. How to sever and cut strategic depth from operative areas in the fields of command, control and logistics.
7. How to develop possibilities or methods to realize a maneuver strike without requiring a frontal breakthrough.
8. How to integrate the Arab allies in the battle effectively. How to avoid becoming embroiled in political complications and lack of military reliability, taking maximum advantage of their operational contribution and allowing them to feel a unity with the rest of the Allied forces.

The plan was structured in view of the analysis of these problems, incorporating the deciding maneuver and fire elements to achieve the purpose.

The Main Points of the Plan

Although the physical threat focused on the Kuwait Theater of Operations where the larger part of the Iraqi army was concentrated, the Americans located the center of the strategic strength in Baghdad!! i.e., the Iraqi regime's headquarters. Accordingly, the main concept of the overall plan was to start by striking the Iraqi strategic strength and assets, and thus shake the foundations of Saddam Hussein's regime and continue by destroying the main military force. The center of the operative strength was defined as being eight Republican Guard divisions.

A battle plan composed of four phases was constructed according to the following analysis:

Phase A - Preparations and creating deterrence.

Phase B - An air offensive planned to hit strategic assets, acquiring air superiority in the Kuwaiti Theater of Operation (KTO) and over Iraq.

Air offensive against the Republican Guard and other forces in the KTO.

Phase C - Ground offensive.

Phase D - Redeployment.

The Four Phases of the War

Phases by ALB	"Desert Shield"	"Desert Storm"		"Desert Pride"	
	Phase A Preparations	Phase B Creating conditions for decisive activity	Phase C Decisive activity	Phase D Redeployment	
Date	2 Aug '90	11 Nov '90	16 Jan '91	24 Feb '91	28 Feb '91
Missions	Deployment Deterrence Defense	1000 hr air operation	"Desert Sword" 1000 hr ground ops.	Redeployment and force organization for continued missions	

Operation "Desert Shield"

In this review, I will not deal with the logistical aspect of Operation "Desert Shield" except to point out that it was the largest logistics operation in history with respect to its duration and scope. In order to assist the reader to visualize the scope of the operation, the concentration of forces can be compared to moving the entire Canadian capital (Ottawa) with all its citizens (600,000), their cars, property and houses, along with enough food, water and gasoline to last an entire year.

I will present other aspects of the operation.

Operation "Desert Shield" included concentration of American and Allied Forces in Saudi Arabia's battle arena, and was divided into two main phases:

Phase A - 7 August 1990 - 11 November 1990

Concentration of forces into the battle arena and their deployment in defense missions against possible Iraqi offensives. Parallel to the concentration of American forces, the U.S. constructed the coalition and coordinated the forces that joined it.

Phase B - 11 November 1990 - 16 January 1991

Additional reinforcement of troops to a level that would be able to execute a military offensive. The forces in the Gulf focused on planning, coordination and intensive training in preparation for the offensive. During this period of time, a wide range of Special Forces activity was carried out in Iraqi and Kuwaiti territory dealing with intelligence gathering missions, subversion and reconnaissance. A widespread deception plan, that I will describe later, was planned and carried out from the beginning of the crisis.

Deciding Elements in Operation "Desert Storm"

The Gulf War highlighted the classic argument between proponents of the maneuver option and the fire option. The continuous air battle on the one hand, and the short ground attack on the other, created the illusion that the war was won by the air forces - the fire element.

Studying this war shows us that despite the air forces' great contribution to victory (I will expand on the quantitative scope of this contribution in the chapter concerning the damages of the war), the deciding point was not achieved until the ground maneuvers were executed.

There is no doubt that there is a close connection - as a necessary condition - between the fire element and the maneuver element, and no future war will see the execution of ground maneuvers before the achievement of air superiority.

The analysis of the deciding elements in this war will be carried out according to the matrix that comprises the U.S. Armed Forces Combat Doctrine - ALB (Air Land Battle). This doctrine reflects the modern fighting method that expresses the dynamic aspects of both forces and the adaption of classic fighting principles to the needs of the modern battlefield, and recognizes the inherent three-dimensional nature of modern warfare. Every ground activity - even that of the most junior level - will be significantly influenced by supportive air activities.

Means for achieving the objective:

AIR	GROUND	SEA
-----	--------	-----

Supportive Elements:	Intelligence Special ops. Psychological warfare Deception Electronic warfare
----------------------	--

The Battle - The Air Element

The air battle was aimed at attacking the centers of strategic strength that allowed Iraq to hold Kuwait. The attack plan focused on paralyzing the Iraqi regime's control ability and its military forces.

The plan defined five goals, each of which was described with targets for attack:

1. To isolate and damage the Iraqi regime's ability.
Targets:
Command and control sites, infrastructure, communications and systems.
2. To achieve and maintain air superiority.
Targets:
Air defense sites, control systems, airfields, radar and warning systems.
3. To destroy Iraqi chemical warfare capability.
Targets:
Military industries, storage facilities, control and command, delivery systems.
4. To damage the Iraqi army's infrastructure.
Targets:
Military industries, air and naval ports, transportation infrastructure, logistics sites and roads to Kuwait.
5. To damage the Iraqi army's ground force ability.
Targets:
The main armored and artillery forces with emphasis on the Republican Guard.

The air attack was activated in four phases, three of which preceded the ground attack.

Phase 1	Phase 2	Phase 3
16 - 23 January	23 - 26 January	26 Jan. - 24 Feb.
* Achieve air advantage.	* Achieve air superiority.	* Maintain superiority.
<----- Destroy SSM positions----->		
<----- Attack Republican Guard----->		
<----- Disrupt Headquarters / Command & Control----->		
* Destroy artillery and anti-aircraft abilities	* Isolate KTO	
* Attack airfields and aircraft	* Attack radar and missiles	* Attack front-line forces
* Destroy CW warehouses and production facilities	* Isolate supply lines to KTO	* Neutralize minefields

Phase 4 was the support of the ground forces during the ground attack.

The air battle made use of almost all types of operational aircraft possessed by the United States Air Force (USAF). The U.S. lost 28 planes while executing 109,876 operational sorties.¹⁵ Thirty-three Iraqi aircraft went down during the air battle, five of which were MIG-29's. They were all hit by AIM-7 (SPARROW) and AIM-9-L (SIDEWINDER) missiles. Three hundred Iraqi underground shelters were destroyed or damaged during the air battle.

Strategic Bombing

Of all the aircraft to participate in strategic bombing, the F-117 (STEALTH) played the most important role. They carried out 20% of all bombing missions, hit 40% of listed targets, flew 1,300 sorties, dropped 2,000 tons of bombs and flew a total of 6,800 hours. The F-117 was the only bomber that was activated over anti-aircraft saturated Baghdad, and according to Air Force statistics, 80% of Precision Guided Munitions (PGM) launched hit their targets.

Interdiction

All types of attack and fighter planes from all the various services participated in these operations, and were successful in their missions. They succeeded, for example, in destroying 42 of 52 bridges used by the enemy.

Suppression of the Iraqi Air Defenses

The suppression of the air defenses was executed by F-111, EA-6B, F-4G, F/A-18 and A-7E planes, which made use of radar jams, anti-radiation missiles, inducement missions and independent defense systems. All the planes that participated in the fighting had warning systems and most also had jamming systems which jammed the enemy's radar systems.

AWACs and Aerial Refuelling

AWACs aircraft were essential to the coordination of the air element. In addition, KC-10 planes (which were also used as transport planes in the airlift) carried out aerial refuelling.

Results

Air superiority:

- * 112 Iraqi aircraft destroyed.
- * 122 Iraqi aircraft defected to Iran.
- * Sorties
 - 1340 against airfields.
 - 535 against weapon production facilities.
 - 1,500 against SCUD positions.
 - 300 against Republican Guard positions.
- * 75% of electricity production capability damaged or destroyed.
- * Coalition losses: 38 aircraft.

Results of Air Attacks on Ground Force ¹⁵

	Original	Destroyed	Remainder
Tanks	4,230	1,700	60%
ATV's	2,370	900	62%
Artillery	3,110	1,400	55%

Summary of the Air Battle Results:

- * Achievement of air superiority by damaging airfields and radar systems.
- * Removal of part of the threat of chemical warfare usage.
- * Destruction of SCUD positions.
- * Damaged Iraqi ability for intelligence gathering.
- * Isolated forces in the KTO.
- * Paralyzed forces along the Saudi border until the ratio of forces was reasonable.
- * Prevented reinforcement of forces.
- * Prepared territory for ground attack.
- * Detonation of minefields.
- * Damage to covered positions.

Preparations for the Ground Battle

The ground forces started making preparations for the ground battle on January 16, 1991 - the same day that the air battle commenced.

These preparations focused on a number of details:

1. Transferring forces to the battle areas.
2. Raids and reconnaissance beyond the border.
3. Deception.
4. Psychological warfare.

Transferring Forces to the Battle Area

The day after the air battle commenced an enormous logistical operation took place in order to transfer the 7th and 18th corps from Eastern Saudi Arabia to the battle area which was 150-250 miles west of the original deployment sites (see map no. 5).

This operation continued day and night for three consecutive weeks. About 65 thousand vehicles and LAV's were transferred to the battle area where frontal supply bases were prepared in 60 days!

This was an exceptional operation due to the fact that within the given area there was only one traffic lane (via the "Teflane" oil pipe service), and therefore precise planning and movement on specially prepared dirt paths were required.

The plan had to be precisely detailed in order to permit this complex mission so that at the end of three weeks the forces could be deployed with a rear infrastructure and the supplies needed for the ground battle.

Raids and Reconnaissance Beyond the Border

The Iraqi artillery was perceived as a threat that endangered the execution of the plan of action because of its potential ability to cause complications while crossing obstacles, but the main threat was the threat of use of missiles with chemical warheads.

From January 16th until the actual offensive the Army and Marine divisions carried out artillery raids on the Iraqi artillery positions. In these raids combat units advanced to the actual border-line (and in some cases crossed it) and initiated fire at Iraqi artillery batteries in order to locate the artillery positions and hit it with counter-battery munitions and aircraft designated to attack the responding batteries.

Another initiative was the massive use of helicopters to locate and attack Iraqi observation and command posts. Combined teams of observation and attack helicopters, with night vision capabilities, located and destroyed these posts by firing HELLFIRE missiles and/or marking targets for COPPERHEAD missiles which were fired from the artillery batteries.

Helicopter borne raids were carried out by Special Forces to attack headquarters, and control sites.

On February 21st an armored regiment task force carried out a violent reconnaissance operation, crossing the border, contacting and destroying an Iraqi lightly armed vehicle, and, with aerial support, returned to Saudi territory. The purpose of this violent reconnaissance was to discern the strength and reaction of the Iraqi positions. It also served the purpose of the deception scheme, as the operation was carried out in a sector which the Americans wished the Iraqis to believe would be the site of the breakthrough.

Parallel to the above activities, the Marines also carried out some silent reconnaissance operations in the Iraqi obstacle area and the special breakthrough areas in order to locate preferred passage routes.

In order to conceal the fact that most of the forces had been transferred to the west, the Americans put special effort into damaging the Iraqi intelligence-gathering abilities. This matter was given priority in the air battle, and as one of the senior American commanders said "first we took out their eyes, then we hit them on the head". Parallel to attacking the Iraqi location and discovery abilities, the deception forces ("GHOST", "RHINOCEROS" and PSYOPS Group 4) carried out activities which were meant to seem as if the two corps were still located in their original deployment sites. The various units were also incorporated into the plan, and the press was invited to review the units' training activity, all of which created the feeling that activities were continuing in the original sites. (These units were mainly rear units which also moved west as soon as the press left the area).

Psychological Warfare

The period that preceded the attack was used for intensive psychological warfare. The objective of this warfare was to undermine the Iraqi army's morale.

Main points that were used in the psychological warfare operation:

1. The Americans had no quarrel with the Iraqi army or its soldiers, but with the regime - Saddam Hussein - in Baghdad.
2. The Iraqi army had no chance of standing up to the coalition forces and, therefore they should give themselves up or refrain from fighting.

The psychological warfare was conducted by the dissemination of over 17 million leaflets telling the Iraqi soldiers to surrender, and explaining how to do so.

In some cases bombs weighing 7.5 tons (BSU-82) were dropped, causing enormous explosions. Immediately after the bombings, leaflets were distributed explaining that this was only a demonstration of what was yet to come, and providing routes in the bombed sector through which the Iraqis could make their way to safety and surrender.

Another psychological warfare activity was by "planting" false radio announcements on the Iraqi communications networks, meant to bring about demoralization among the listeners.

In addition, two stations posing as free Iraqi underground forces were established, dealing with anti-Iraqi propaganda broadcasts.

It should be pointed out that in retrospect, as discovered from Iraqi prisoners, bombing by the B-52 planes in the MLRS (that they also called "iron rain") had no less of a psychological effect, and in some cases even more of one, due to the tremendous damage that they caused.

The Battle - Deception

The deception plan was an integral part of the operations overall strategy. The planning of the deception was started in August and it played a vital role in running the battle throughout.

Objectives of the Deception

To prevent the Iraqis from correctly estimating the power, location and intentions of the coalition forces.

During the phase of concentrating the forces, the deception objective was to present a larger order of battle than actually existed, in order to deter the Iraqis from attacking at this critical stage when the American forces were small in number and relatively disorganized.

When it was decided that a military offensive was needed, the following operational objectives were defined:

- To persuade the Iraqis that the Allied Forces would attack frontally against the defense layout deployed on the Kuwaiti-Saudi Arabian border and from the west by sea.
- To prevent the Iraqi forces leaving the KTO, in order to be able to destroy them at the planned time.

The plan included a wide range of means, in three dimensions - ground, sea and air.

The deception plan was meant to induce the Iraqis into thinking that the main effort would be for Kuwait and would be supported by Marines landing from the sea.

Before the beginning of Operation "Desert Storm", the deception efforts included amphibious exercises after the commencement of the aerial fighting. The Navy executed large landing exercises which received press coverage. Before the ground offensive started, the deception was supported by border infiltrations, artillery fire and air attacks. The result was the concentration of ten Iraqi divisions along the Kuwaiti shore.

During the weeks before the war, the coalition air forces routinely demonstrated a massive presence on the Iraqi radar systems. Movement identified by the Iraqi radar upon the onset of the war was believed by them to be routine, and the result was the achievement of surprise.

Achievements

- * The overall deception effort succeeded, the Iraqis prepared for a frontal attack from the south and a naval attack from the east, but were surprised by the armored formations in the west.
- * The American intelligence exposed several Iraqi deception operations.
- * Iraq failed in its efforts to make Kuwait seem unworthy of international political support.

In retrospect, it can be said that the deception plan was more successful than expected. The Iraqis devoted 10 divisions to guarding the Kuwaiti coastline and many of their limited resources were invested in planting obstacles against a naval landing. From interrogations of Iraqi prisoners it was discovered that the Iraqi estimation of the Allied Forces was similar to that which the allies tried to project.

The Battle - The Ground Offensive

The decision to carry out the ground offensive phase on the 24th of February was based on three main considerations.

1. Massive destruction of the Iraqi tank and artillery order of battle in the KTO, although the confirmation available to General Schwarzkopf on 24th February showed that the original objective - 50% - had not yet been achieved.
2. Minimizing the gap between the Coalition's force ratio and that of the Iraqis. The Central Command saw massive damage to the Iraqi units. The Americans estimated that the Iraqi front line divisions had been reduced to 50-75% of their original strength, and the Republican Guard forces were damaged to 75% of their original strength. The Americans subsequently learned that this assessment far exceeded the actual level of destruction.
3. The perceived success of the above-described deception plan.
4. Based on these considerations, General Schwarzkopf reached the conclusion that the conditions were satisfactory for starting the fourth phase - the ground offensive - Operation "Desert Storm".

The mission defined for the ground forces was to sever the vital supply routes in south east Iraq (Route 18), destroy the Iraqi army in the KTO, liberate Kuwait and permit the liberation of Kuwait-City by the Arab Coalition.

Operation "Desert Storm"

Mission

- * To sever and cut vital transportation routes in South-East Iraq.
- * To destroy the Iraqi ground forces in the KTO.
- * To liberate Kuwait.

As mentioned above, the center of Iraq's operative strength was located in the Republican Guard divisions. Accordingly, the main target of the operation was to debilitate and deactivate the Republican Guard forces.

Description of the Ground Offensive

The ground offensive was based on the classic stratagem of the "Double Crown". (For examples of historical applications of this stratagem, see Hannibal's War, Rommel's Gazla - battle in World War II and Guderian's German invasion of Russia in World War II).

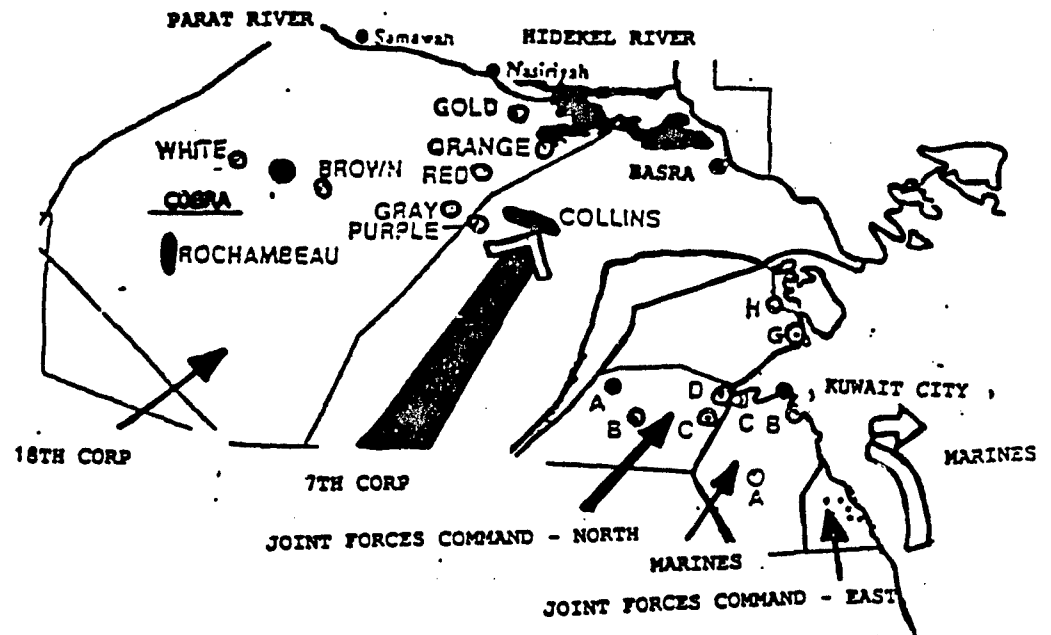
Schematically, this stratagem can be described as initially dealing with the "outer layer" or "covering" defending the "heart" of the enemy's force and, after the penetration of the latter, attacking the enemy's strength center with maximum power and overpowering it.¹⁶ [see map no. 2]

The operational plan was based on the "Double Crown" stratagem, its main points being:

1. Execution of a deep western flanking movement by the VII and VIII Corps, and flanking the Iraqi defense layout with the main force.
2. Isolation of the KTO by the XVIII Corps.
3. Frontal attack against the Iraqi defense layout in Kuwait by task forces, the Saudi forces, the Marines and the Egyptian-Syrian forces.
4. After inflicting external damage on the Iraqi layout - the outer layer - infiltrating the VII Corps, the coalition's main armored force, to attack the main Iraqi forces - the Republican Guard divisions.

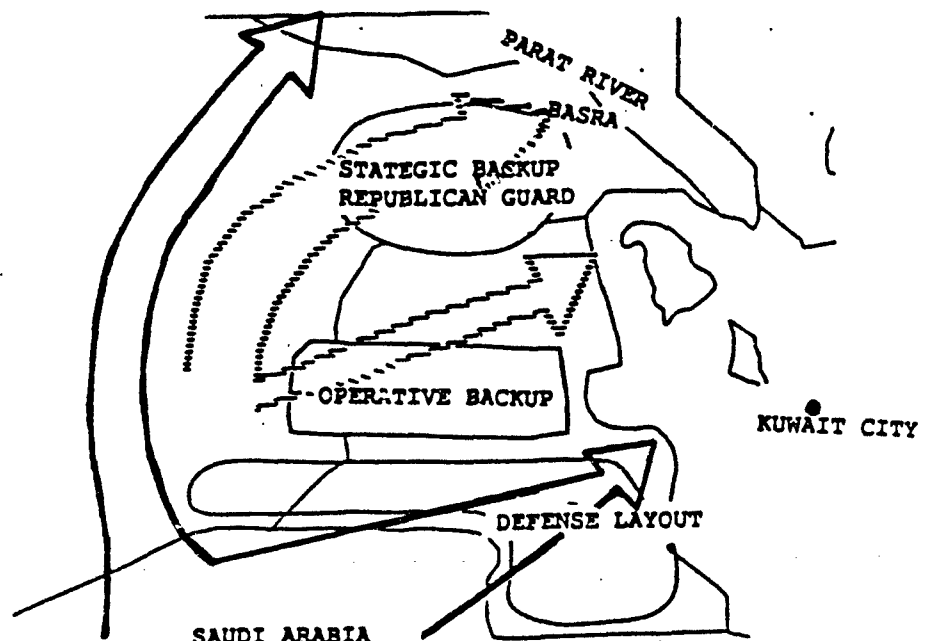
5. Execution of ground and sea deception, based on the overall deception battle plan.

Diagram no. 416



MAP 2

"DOUBLE CROWNING"
GROUND ATTACK PLAN



On the morning of February 24, 1991, two Saudi Arabian task forces crossed the coastal defense posts.

The 1st and 2nd Marines Divisions, along with the "Tiger" armor brigade of the 2nd Armored Division, crossed the border and broke through "impenetrable" defense line.

The 1st Armored Division reconnaissance advanced along the wadi in order to focus the Iraqi's attention on the Kuwaiti/Saudi Arabian border.

The 101st Air Assault Division established the forward "Cobra" base.

the 6th French Armored Division and the 82nd Airborne Division advanced towards the "El-Salman" airfield.

That afternoon, the 1st and 2nd Marines Divisions, along with the "Tiger" armor brigade of the 2nd Armored Division, continued to advance toward Kuwait-City, the capital.

The Arab allies broke through the barriers and deceived the enemy into believing that the Allies were executing a frontal attack.

The 1st Infantry Division cleared minefields to allow passage for the 1st British Armored Division and the remainder of the VII Corps.

The 101st Air Assault Division and the 24th Armored Infantry Divisions attacked the Parat valley.

The 6th French Armored Division and the 82nd Airborne Division continued attacking the north.

Thousands of Iraqi soldiers were taken prisoners of war on the first day.

During the following days, the main purpose of the battle was to complete the operations that had commenced on February 24th, including closing the Iraqi forces in the KTO, blocking escape routes along the Parat and Hidekel rivers and liberating Kuwait City.

Of the Iraqi divisions, 40 were severely damaged and 19 were destroyed, as follows:

- 75% of all Iraqi tanks;
- 65% of all Iraqi armored troop vehicles;
- 80% of all Iraqi artillery;
- The capture of over 100,000 Iraqi POW's.

The ground attack phase was short and rapid, and targets were achieved with low losses.

Tanks

At the end of November 1990, the US Army began exchanging the M-1 battle tanks in favor of the more heavily armed M1A1 tanks, of which a total of about 1,100 reached the battle arena. One of the advantages of these tanks is their ability to fight under chemical warfare conditions.

The M1A1 functioned well in all the weather conditions (rain, sand storms and storms).

Some of the tanks had a special "protection pack" which proved successful. There are no known cases of U.S. tanks penetrated by Iraqi ammunition. (A number of tanks were hit by friendly fire).

One of the advantages of these tanks was the range of the main gun which out-distanced that of the enemy's, and as a result the tanks of the 2nd Brigade of the 1st Armored Division succeeded in destroying 100 tanks and 30 armored troop vehicles in 45 minutes of battle.

Deep Attack/Helicopters

The deep attack and the establishment of the "Cobra" base by the 101st Division was the largest helicopter mission throughout the war. The Division penetrated 160 km into Iraq, secured the area and established a supply base for the continued operations.

The AH-64 "Apache" helicopters played a key role in the destruction of Iraqi radar stations at the beginning of the war and in destroying armor forces. The "Apache" was one of the first weapon systems capable of night fighting and under bad weather conditions. A total of 274 helicopters were deployed from 15 squadrons. These helicopters fired 2876 "Hellfire" missiles (with a greater shooting range than that of the Iraqi counter weapon). In one attack an "Apache" squadron from the 24th division (on March 2nd, west of Barsa) destroyed 84 tanks and armored vehicles, 4 air defense systems, 8 artillery pieces and 38 general purpose vehicles, while losing only one helicopter whose crew was rescued.

The problem of rotor debilitation by sand was solved by coating the helicopters' blades with a special material and carrying out maintenance work under shelters.

Tactical Missile Defense

"Patriot" batteries were stationed in support of "Desert Storm": 21 in Saudi Arabia, 6 in Israel and 2 in Turkey. Initial reports show that the "Patriots" succeeded in intercepting most of the SCUD missiles that entered their interception range. The "Patriots" played an important political role by preventing Israel from entering the war.

The Battle - The Naval Fighting Element

The Navy and the Marines played a key role in the protection of the sealift, enforcing the embargo and protecting the naval arena throughout Operation "Desert Shield".

During Operation "Desert Storm" the naval forces executed attack and defense missions, that included launching "Tomahawk" missiles, air and artillery support, destruction of Iraqi naval forces and paralyzing the Iraqi forces by executing deception activities.

Cruise Missile Operations

The cruise missiles were activated from battleships, destroyers and submarines. A total of 477 launchers were deployed in the naval arena.

During "Desert Storm", of a total of 288 missiles fired, 276 were launched from surface ships and 12 from submarines. Approximately 80% of the missiles were fired from the Persian Gulf and the rest were fired from the Red Sea. The success rate (measured by the missiles entrance into the cruise route) was estimated at 98%. The missiles proved to be efficient in all weather conditions.

Remote Piloted Vehicles (RPV)

RPVs were activated to locate artillery fire, day and night reconnaissance, observation and damage assessment. Six RPV "Pioneer" units were deployed in the arena, each unit included 5 planes and 40 crew personnel. The "Pioneer" succeeded in meeting the operational requirements it faced.

Mine Warfare

It was apparent that there was a gap in the naval mine sweeping capability.

The Battle - The Intelligence Element¹⁷

The contribution of Intelligence to the "Desert Shield" and "Desert Storm" operations was successful. Both CENTCOM and the Department of Defense's Intelligence Agency (DIA) issued warnings of an Iraqi invasion of Kuwait at the end of July 1990.

Special emphasis was put on early warning of SCUD attacks. On 2nd September the DOD established a Joint Intelligence Center (DOD-JIC), whose object was to integrate all intelligence material for CENTCOM.

To support the operation, a new information center was established to gather information with respect to military and governmental facilities constructed by foreign companies, Iraqi R&D chemical warfare plans, improved SCUD characteristics and foreign weapon systems in the Iraqi army.

The battle damage assessment (BDA) was not sufficient at the beginning of the war, but it improved. There was an observation aircraft availability problem, and the bad weather conditions created additional problems. The field commanders demanded more precise damage assessments.

A number of systems designed to provide the field commanders with intelligence were activated - including the JSTAR aircraft which made a large contribution. OV-1D planes provided important information concerning the opponent's ground movements. The VII Corps used experimental RPV's to gather intelligence and the Navy and Marines used observation RPV's, target identification reconnaissance and BDA. Despite this, there was a need for additional systems capable of transmitting intelligence in all weather conditions.

Achievements

- * Intelligence foresaw the use of oil as an environmental weapon.
- * JSTAR aircraft proved to be efficient in locating enemy movements.
- * A Joint Intelligence Center was established by the DOD in Washington.
- * BDA procedures.
- * Cooperation between intelligence officers from the coalition countries.

Failures

- * Serious problems in disseminating information to users in real time (intelligence, surveillance) - the advantage belonged to the smaller circuits.
- * Improved imagery and observation means were required.
- * BDA was slow and difficult, delaying follow-up attacks.
- * There was a need for observation/search systems in all weather conditions to improve tactical intelligence.
- * Iraq succeeded in hiding most of its chemical warfare and nuclear facilities.
- * The coalition could not locate SCUD missile launchers and the SSM attacks continued.

Unanswered Questions

Why did not Iraq activate chemical and biological SSM's?

Systems Stationed in Space

The satellite communications systems belonging to the DOD passed 75% of internal and external communication via satellites.

Space imagery systems were used for planning the attacks, locating Iraqi movement and gathering other intelligence.

Satellite navigation systems (GPS) supported the overall success and rectified cruise and plane missile navigation. Field commanders stated that the deep flanking movement by the VII Corps would not have been as successful as it was without the support of these systems.

Summary and Conclusion

A major problem is the difference between the conditions under which the war took place, and the conditions under which the IDF operates. The U.S. was a global power working with a wide coalition.

The U.S. was fortunate to have a long period in which to build up strength. Such a period will probably not be available to Israel. In addition, the economy of Israel could not withstand the strain of a prolonged mobilization of reserves. Because it possesses the world's greatest economy, and because of the financial assistance of the other major economic powers, the U.S. could fight a "luxury" war. The IDF lacks the financial resources for such a campaign.

Because of the broad domestic and international political coalition, the U.S. was permitted a relatively unlimited amount of time to gain air superiority and prepare for the ground battle. International political pressures require that the IDF complete a campaign in a relatively short period of time.

In the event of an Iraqi attack, the U.S. had strategic depth. Israel cannot permit an enemy to cross its borders.

As a general principle, it is much more difficult to learn from success than from failure. However, the following preliminary lessons can be learned by the IDF:

1. Decisive military leadership is needed to establish clear objectives.
2. Absence of micromanagement of battle by civilian authorities is a plus.
3. The Americans operated in this war according to the ALB (Air Land Battle) that proved its worth. The emphasis of this doctrine is on technology (with a high kill ability), intensity (destruction of equipment and personnel) and a large amount of air support. The foundations of this doctrine are: expanding the depth and width of the battlefield, air force - ground force cooperation, damaging the enemy's intelligence gathering systems and achieving victory by the indirect approach (Liddell Hart's strategy).
4. This war proved the advantage and superiority of western technology with the F-117 "STEALTH" plane, thermal vision systems, GPS navigation systems, "Apache" helicopters and the M1A1 main battle tank. The IDF must maintain its qualitative edge.

5. Deception was widely used and was a main element in the overall plan, paralyzing about ten Iraqi divisions defending the Kuwaiti coastline against an amphibious attack.
6. Despite satellite intelligence gathering abilities, there was a problem in providing real time intelligence to tactical users, as it was "stuck" between Washington and the firing battery.
7. The war emphasized the efficiency of PGM. A total of 6,000 tons of PGM were dropped with success rates of 80% to 90%.
8. The efficiency of attack helicopters was proved. Two hundred and seventy-four "Apache" helicopters were activated from 14 regiments. Each division had one or two regiments under its command (20-40 attack helicopters). They operated at night and under bad weather conditions. They could attack a depth of 150 km and destroyed targets on route at a range of 3km. They also contributed in intelligence gathering.
9. Psychological warfare was an important element in achieving operative and strategic targets. The Americans started the psychological warfare at the beginning of the crisis in August 1990. The target was world-wide and American public opinion and convincing them of the necessity for a military operation, and later on in convincing Iraqi troops of the need to overthrow Saddam Hussein. During the fighting phase, the psychological warfare was used to break the Iraqi soldier's will to fight. This was done by television, dropping leaflets, false radio network broadcasting and penetrating military radio networks.
10. The fighting was activated continuously throughout the day and night with the help of thermal imagery technology and the air forces' night attack capabilities.
11. It became apparent that there was a serious problem in assessing battle damage - this can be seen by comparing different assessments of the successes of the air attacks. On 27th February 1991 General Schwarzkopf announced that the Iraqis were left with 29% of their tanks, 22% of their armored troop vehicles and 32% of their cannons. On 6th March 1992 it was reported that the Iraqis were left with 59% of their tanks, 67% of their armored troop vehicles and 53% of their cannons.
12. The Gulf War proved the urgent problem of identification friend - or foe (IFF) on the air to ground, ground to air and ground to ground battlefield. According to the information, 35 soldiers were killed in five incidents of friendly fire.

13. The U.S. successfully and effectively utilized the media. Popular support was maintained and disinformation was released as part of the deception programs.
14. The U.S. was unable to apply all of its resources against the Iraqi SCUDS because of division of responsibilities. The most effective anti-SCUD weapon was the Apache which belonged to the Army. However, the Air Force was charged with the responsibility for destroying the SCUDs and, accordingly, the Apache was not utilized.
15. Close air support was essential and in that context the cooperation between the services was effective. The IDF must perfect such coordination.
16. The U.S. overestimated the abilities and "will to fight" of the Iraqi army. Accordingly, excess forces were allocated to missions. The IDF cannot afford such luxuries.
17. The Iraqi strategic center of gravity was Saddam Hussein while the operational center of gravity was the Republican Guard. The U.S. succeeded in destroying the operational center of gravity but the strategic center of gravity remained intact. The IDF cannot afford to leave the strategic center of gravity untouched.
18. The U.S. fought the war on a step-by-step basis, the ground attack against the Republican Guard (which was the decisive point) coming only at the end. The IDF must go right to the center of gravity. It must decisively engage the enemy and defeat him at once.

These lessons from the Gulf War should be taught in the IDF at the various levels taking into account the unique situation facing the IDF.

As the fighting means that the IDF possesses are American, it is very important to continue studying the lessons from the activation of these systems and to apply them after drawing IDF conclusions.

The IDF must remember that its neighbors/enemies that participated in that war, gained concentrated knowledge of American/western combat doctrines, and learned and used new weapon systems - some of which the IDF possesses - that were meant to be a surprise.

The topic of chemical and biological warfare did not find expression in the war, and the capabilities of the Iraqi army in this area were only discovered after the war had ended. Information should be gathered on this topic in order to make necessary preparations.

ENDNOTES

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2. Benny Michelson, "Operation Desert Storm" Ma'arachot 320 (1990):2.
3. Hershko, 8.
4. Ibid., 27-28.
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6. Ibid., 107.
7. Ibid., 26.
8. Ibid., 26.
9. Ibid., 27.
10. Ibid., 32.
11. Michelson, 11.
12. Yanai and Naveh, 24.
13. Hershko, 39.
14. Ibid., 40.
15. Yanai and Naveh, 108.
16. Hershko, 43.
17. Yanai and Naveh, 42.

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Appendix A

16 November 1992

TO: _____

Fellow War College Student:

OPERATIONS DESERT SHIELD AND DESERT STORM provided many important lessons about readiness and willingness to fight. My Military Study Project is aimed at analyzing these operations from the perspective of the Israeli Defense Force with a focus on the ground campaign. This survey was structured to gain insights into the campaign from the commander's who were present. The key objective is to determine the decisive points of the campaign and the factors that contributed to the U.S. Army's success. I would appreciate your candid responses and explanatory comments.

Thank you for your time in completing this survey. Please print your remarks in order to assist me in understanding your responses. I would appreciate your return of the survey not later than 1 December 1992.


Colonel Giora Inbar
Israel Defense Forces
Seminar # 7
Box 16

DECISIVE MILITARY ELEMENTS IN THE GULF WAR

1. Did you serve in the Gulf during Operation Desert Shield or Desert Storm?

Yes
No

(If no, thank you for your time.)

2. In your opinion, what was the readiness level of the soldiers in your unit on arrival?

Fully combat ready, no additional training required
1-14 days additional training required
15-30 days additional training required
31-45 days additional training required
46-60 days additional training required
More than 60 days additional training required

3. In your opinion, what was the readiness level of the officers in your unit on arrival?

Fully combat ready, no additional training required
1-14 days additional training required
15-30 days additional training required
31-45 days additional training required
46-60 days additional training required
More than 60 days additional training required

4. In your opinion, what was the readiness level of the equipment in your unit on arrival?

Fully combat ready, no additional maintenance required
1-14 days additional maintenance required
15-30 days additional maintenance required
31-45 days additional maintenance required
46-60 days additional maintenance required
More than 60 days additional maintenance required

9. How adequate was the battlefield intelligence on enemy terrain and obstacles?
Please explain how/why it was or was not adequate.

10. After engaging in combat operations with the enemy forces, how would you evaluate the enemy's capabilities in comparison to your own troops?

The enemy was:

	Much Worse	Worse	The Same	Better	Much Better
a. Land navigation	1	2	3	4	5
b. Gunnery	1	2	3	4	5
c. Coordination/synchronization	1	2	3	4	5
d. Tactical air support	1	2	3	4	5
e. Endurance of troops	1	2	3	4	5

=====

11. Once forces were committed to battle, to what extent was the operational plan followed in terms of sequencing and timing?

Not at all	Slightly	Moderately	Mostly	Completely
1	2	3	4	5

Please explain:

16. What was your personal assessment of the Iraqi Soldier Training?

Very Ineffective	Ineffective	Marginal	Effective	Very Effective
1	2	3	4	5

Please explain.

17. What was your personal assessment of the Iraqi Equipment?

Very Ineffective	Ineffective	Marginal	Effective	Very Effective
1	2	3	4	5

Please explain.

18. What was your personal assessment of the Iraqi Tactical Doctrine?

Very Ineffective	Ineffective	Marginal	Effective	Very Effective
1	2	3	4	5

Please explain.

Q1 SERVE IN ODS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
YES	1	55	100.0	100.0	100.0
	TOTAL	55	100.0	100.0	
Mean	1.000	Std Dev	0.0	Minimum	1.000
Maximum	1.000				
Valid Cases	55	Missing Cases	0		

Q2 READINESS OF SOLDIERS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
READY	1	16	29.1	29.1	29.1
1 14 DAYS	2	35	63.6	63.6	92.7
15 30 DAYS	3	4	7.3	7.3	100.0
	TOTAL	55	100.0	100.0	
Mean	1.782	Std Dev	.567	Minimum	1.000
Maximum	3.000				
Valid Cases	55	Missing Cases	0		

Q3 READINESS OF OFFICERS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
READY	1	22	40.0	40.0	40.0
1 14 DAYS	2	31	56.4	56.4	96.4
15 30 DAYS	3	2	3.6	3.6	100.0
	TOTAL	55	100.0	100.0	
Mean	1.636	Std Dev	.557	Minimum	1.000
Maximum	3.000				
Valid Cases	55	Missing Cases	0		

Q4 READINESS OF EQUIPMENT

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
READY	1	19	34.5	34.5	34.5
1 14 DAYS	2	31	56.4	56.4	90.9
15 30 DAYS	3	5	9.1	9.1	100.0
		-----	-----	-----	
	TOTAL	55	100.0	100.0	
Mean	1.745	Std Dev	.615	Minimum	1.000
Maximum	3.000				

Valid Cases 55 Missing Cases 0

Q5 AVAILAILITY OF EQUIPMENT

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
FULLY AVAILABLE	1	4	7.3	7.3	7.3
90 99%	2	42	76.4	76.4	83.6
80 89%	3	9	16.4	16.4	100.0
		-----	-----	-----	
	TOTAL	55	100.0	100.0	
Mean	2.091	Std Dev	.482	Minimum	1.000
Maximum	3.000				

Valid Cases 55 Missing Cases 0

Q6 DEF TACTICAL OBJECTIVES

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
CLEAR DEF	1	16	29.1	29.1	29.1
WELL DEF	2	28	50.9	50.9	80.0
SOME WHAT	3	9	16.4	16.4	96.4
BAD	4	1	1.8	1.8	98.2
NOT DEF	5	1	1.8	1.8	100.0
TOTAL		55	100.0	100.0	

Mean 1.964 Std Dev .838 Minimum 1.000
Maximum 5.000

Valid Cases 55 Missing Cases 0

Q7 DISSEMANATION TO THE CORPS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
YES	1	16	29.1	29.1	29.1
NO	2	39	70.9	70.9	100.0
TOTAL		55	100.0	100.0	

Mean 1.709 Std Dev .458 Minimum 1.000
Maximum 2.000

Valid Cases 55 Missing Cases 0

Q8 DISSEMANATION TO THE DIVISION

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
YES	1	21	38.2	38.2	38.2
NO	2	34	61.8	61.8	100.0
TOTAL		55	100.0	100.0	

Mean 1.618 Std Dev .490 Minimum 1.000
Maximum 2.000

Valid Cases 55 Missing Cases 0

Q9 DISSEMANATION TO THE BRIGADE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
YES	1	25	45.5	45.5	45.5
NO	2	30	54.5	54.5	100.0
		-----	-----	-----	
	TOTAL	55	100.0	100.0	
Mean	1.545	Std Dev	.503	Minimum	1.000
Maximum	2.000				
Valid Cases	55	Missing Cases	0		

Q10 DISSEMANATION TO THE BATTALION

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
YES	1	28	50.9	50.9	50.9
NO	2	27	49.1	49.1	100.0
		-----	-----	-----	
	TOTAL	55	100.0	100.0	
Mean	1.491	Std Dev	.505	Minimum	1.000
Maximum	2.000				
Valid Cases	55	Missing Cases	0		

Q11 DISSEMANATION TO THE COMPANY

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
YES	1	34	61.8	61.8	61.8
NO	2	21	38.2	38.2	100.0
		-----	-----	-----	
	TOTAL	55	100.0	100.0	
Mean	1.382	Std Dev	.490	Minimum	1.000
Maximum	2.000				
Valid Cases	55	Missing Cases	0		

Q12 DISSEMANATION TO THE PLATOON

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
YES	1	32	58.2	58.2	58.2
NO	2	23	41.8	41.8	100.0
		-----	-----	-----	
	TOTAL	55	100.0	100.0	
Mean	1.418	Std Dev	.498	Minimum	1.000
Maximum	2.000				
Valid Cases	55	Missing Cases	0		

Q13 DISSEMANATION TO THE SQUAD

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
YES	1	36	65.5	65.5	65.5
NO	2	19	34.5	34.5	100.0
		-----	-----	-----	
	TOTAL	55	100.0	100.0	
Mean	1.345	Std Dev	.480	Minimum	1.000
Maximum	2.000				
Valid Cases	55	Missing Cases	0		

Q14 ENEMY LAND NAVIGATION

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
M WORSE	1	18	32.7	35.3	35.3
WORSE	2	28	50.9	54.9	90.2
SAME	3	4	7.3	7.8	98.0
BETTER	4	1	1.8	2.0	100.0
	.	4	7.3	MISSING	
		-----	-----	-----	
	TOTAL	55	100.0	100.0	
Mean	1.765	Std Dev	.681	Minimum	1.000
Maximum	4.000				
Valid Cases	51	Missing Cases	4		

Q15 ENEMY GUNNERY

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
M WORSE	1	25	45.5	48.1	48.1
WORSE	2	27	49.1	51.9	100.0
	.	3	5.5	MISSING	
		-----	-----	-----	
	TOTAL	55	100.0	100.0	

Mean 1.519 Std Dev .505 Minimum 1.000
Maximum 2.000

Valid Cases 52 Missing Cases 3

Q16 ENEMY COORDINATION

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
M WORSE	1	38	69.1	71.7	71.7
WORSE	2	15	27.3	28.3	100.0
	.	2	3.6	MISSING	
		-----	-----	-----	
	TOTAL	55	100.0	100.0	

Mean 1.283 Std Dev .455 Minimum 1.000
Maximum 2.000

Valid Cases 53 Missing Cases 2

Q17 ENEMY AIR SUPPORT

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
M WORSE	1	44	80.0	84.6	84.6
WORSE	2	7	12.7	13.5	98.1
BETTER	4	1	1.8	1.9	100.0
.	.	3	5.5	MISSING	
TOTAL		55	100.0	100.0	
Mean	1.192	Std Dev	.525	Minimum	1.000
Maximum	4.000				

Valid Cases 52 Missing Cases 3

Q18 ENEMY ENDURANCE OF TROOPS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
M WORSE	1	21	38.2	39.6	39.6
WORSE	2	24	43.6	45.3	84.9
SAME	3	6	10.9	11.3	96.2
BETTER	4	2	3.6	3.8	100.0
.	.	2	3.6	MISSING	
TOTAL		55	100.0	100.0	
Mean	1.792	Std Dev	.793	Minimum	1.000
Maximum	4.000				

Valid Cases 53 Missing Cases 2

Q19 SEQUENCING AND TIMING OF PLANE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
F SLIGHTLY	2	7	12.7	13.2	13.2
F MODERATLY	3	8	14.5	15.1	28.3
F MOSTLY	4	32	58.2	60.4	88.7
F COMPLETELY	5	6	10.9	11.3	100.0
	.	2	3.6	MISSING	
	TOTAL	55	100.0	100.0	

Mean 3.698 Std Dev .845 Minimum 2.000
Maximum 5.000

Valid Cases 53 Missing Cases 2

Q20 OPERATING WITH COALITION FORCES

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
YES	1	25	45.5	45.5	45.5
NO	2	26	47.3	47.3	92.7
	4	2	3.6	3.6	96.4
	5	1	1.8	1.8	98.2
	6	1	1.8	1.8	100.0
	TOTAL	55	100.0	100.0	

Mean 1.745 Std Dev 1.004 Minimum 1.000
Maximum 6.000

Valid Cases 55 Missing Cases 0

Q21 EFFECTIVNESS OF COALITION C3 COORDINATIO

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
INEFF	2	3	5.5	5.7	5.7
MERGINAL	3	11	20.0	20.8	26.4
EFFEC	4	10	18.2	18.9	45.3
VERY EFFEC	5	6	10.9	11.3	56.6
NOT APP	6	23	41.8	43.4	100.0
.	.	2	3.6	MISSING	
TOTAL		55	100.0	100.0	
Mean	4.660	Std Dev	1.372	Minimum	2.000
Maximum	6.000				
Valid Cases	53	Missing Cases	2		

Q22 AMMUNITION SUPPORT

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
POOR	2	2	3.6	3.7	3.7
MARG	3	8	14.5	14.8	18.5
GOOD	4	25	45.5	46.3	64.8
EXCELLENT	5	17	30.9	31.5	96.3
.	6	2	3.6	3.7	100.0
.	.	1	1.8	MISSING	
TOTAL		55	100.0	100.0	
Mean	4.167	Std Dev	.863	Minimum	2.000
Maximum	6.000				
Valid Cases	54	Missing Cases	1		

Q23 RATIONS SUPPORT

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
VERY POOR	1	1	1.8	1.9	1.9
POOR	2	5	9.1	9.3	11.1
MARG	3	8	14.5	14.8	25.9
GOOD	4	26	47.3	48.1	74.1
EXCELLENT	5	14	25.5	25.9	100.0
	.	1	1.8	MISSING	
TOTAL		55	100.0	100.0	

Mean 3.870 Std Dev .972 Minimum 1.000
Maximum 5.000

Valid Cases 54 Missing Cases 1

Q24 WATER SUPPORT

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
POOR	2	1	1.8	1.8	1.8
MARG	3	5	9.1	9.1	10.9
GOOD	4	31	56.4	56.4	67.3
EXCELLENT	5	18	32.7	32.7	100.0
TOTAL		55	100.0	100.0	

Mean 4.200 Std Dev .678 Minimum 2.000
Maximum 5.000

Valid Cases 55 Missing Cases 0

Q25 MEDICAL SUPPORT

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
POOR	2	2	3.6	3.6	3.6
MARG	3	8	14.5	14.5	18.2
GOOD	4	26	47.3	47.3	65.5
EXCELLENT	5	19	34.5	34.5	100.0
TOTAL		55	100.0	100.0	

Mean 4.127 Std Dev .795 Minimum 2.000
Maximum 5.000

Valid Cases 55 Missing Cases 0

Q26 ASSESSMENT IRAQI LDRSHP

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
V INEFF	1	21	38.2	39.6	39.6
INEFF	2	22	40.0	41.5	81.1
MARG	3	9	16.4	17.0	98.1
EFPEC	4	1	1.8	1.9	100.0
.	.	2	3.6	MISSING	
TOTAL		55	100.0	100.0	

Mean 1.811 Std Dev .786 Minimum 1.000
Maximum 4.000

Valid Cases 53 Missing Cases 2

Q27 ASSESSMENT IRAQI SOLDIER TNG

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
V INEFF	1	7	12.7	13.5	13.5
INEFF	2	26	47.3	50.0	63.5
MARG	3	17	30.9	32.7	96.2
EFPEC	4	2	3.6	3.8	100.0
	.	3	5.5	MISSING	
TOTAL		55	100.0	100.0	

Mean 2.269 Std Dev .744 Minimum 1.000
Maximum 4.000

Valid Cases 52 Missing Cases 3

Q28 ASSESSMENT IRAQI EQUIPMENT

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
V INEFF	1	2	3.6	3.8	3.8
INEFF	2	23	41.8	44.2	48.1
MARG	3	19	34.5	36.5	84.6
EFPEC	4	8	14.5	15.4	100.0
	.	3	5.5	MISSING	
TOTAL		55	100.0	100.0	

Mean 2.635 Std Dev .793 Minimum 1.000
Maximum 4.000

Valid Cases 52 Missing Cases 3

Q29 ASSESSMENT IRAQI TACTICAL DOCTRINE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
V INEFF	1	12	21.8	23.1	23.1
INEFF	2	29	52.7	55.8	78.8
MARG	3	10	18.2	19.2	98.1
EFPEC	4	1	1.8	1.9	100.0
	.	3	5.5	MISSING	
TOTAL		55	100.0	100.0	

Mean 2.000 Std Dev .714 Minimum 1.000
Maximum 4.000

Valid Cases 52 Missing Cases 3

Q30 ACCOMPLISHMENT ALL OBJECTIVES

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
YES	1	46	83.6	86.8	86.8
NO	2	7	12.7	13.2	100.0
	.	2	3.6	MISSING	
TOTAL		55	100.0	100.0	

Mean 1.132 Std Dev .342 Minimum 1.000
Maximum 2.000

Valid Cases 53 Missing Cases 2

Q08: HOW ADEQUATE WAS THE BATTLEFIELD INTELLIGENCE ON ENEMY CAPABILITIES AND INTENTIONS? PLEASE EXPLAIN HOW/WHY IT WAS OR WAS NOT ADEQUATE.

01 We had a basic understanding of Iraqi organization and equipment, but we had little information on their doctrine and tactics. This really precluded us from any way of determining ~~their~~ intentions. A definite shortfall for the conflict.

02 N/A

03 My unit was one of the first to deploy. Initial elements deployed in mid-August. Situation was still sorting itself out. We received timely intelligence. Adequacy can not really be determined although it appeared we received what we needed.

04 Battlefield intelligence on enemy capabilities and intentions was adequate. Enemy dispositions generally followed templated locations. Enemy intentions were less accurate. General consensus was light to moderate resistance. This only proved time in a few instances. Usually it was no resistance. Again, my vantage point was from a support role. In no instance did my unit come under attack from any by-passed enemy forces or from any enemy forces operating in the brigade's rear area.

05 Disposition: Our area of interest extended 75 km to our front and 10 km to our flanks. If aero scouts could not fly, our all source intell were too old to be reliable and we determined enemy situation with our own scouts. Intell or capabilities intentions was weak. Our S-2 were guessing. Nobody predicted so many surrenders or _____ of their tank crews.

06 Intelligence on capabilities plus intentions was adequate. Intelligence on enemy disposition was not adequate.

07 Not very adequate. First four weeks, August 1990, military intelligence was certain the Iraqi's would invade Saudi Arabia. Each night we would prepare for invasion that probably wasn't even considered by the Iraqi's.

08 Capabilities--very good. Intentions--OK, but nobody really knew what the intentions were.

09 No answer

10 Adequate--2 briefings from Division G2 per day.

11 My battalion did an air assault into Iraq on G-Day. In our area (FOB COBRA) there was supposed to be only 15-30 men of a supply unit. Instead there was a dug-in infantry battalion who was acting as a blocking force in our sector.

12 Good and Bad. 1. Breach of Iraqi "Complex" obstacle was bad. Updated intelligence would have corrected this situation.
2. Near the beginning of the ground war, the intelligence sent down by Corps and Army headquarters was accurate and updated.
3. After the ground war started, not much intelligence came down from higher.

13 Poor--Enemy capabilities were overstated and intentions / were completely unknown!

14 No answer

15 Lacking--received limited and often outdated (old) info. /

16 No answer

17 Battlefield intelligence was very adequate - Order of battle was good (enemy) - Enemy strength and disposition was good.

18 No answer

19 Adequate for my purposes as a military police battalion commander - not really "real time"--at times the information was received too late to impact on the operation.

20 Before Desert Storm, our intelligence community told us that the Iraqi's were very strong, ready and willing to fight. Even before G-day we found this to be false. As we conducted deep reconnaissance and recovery operations, we found the enemy weak and unwilling.

During the 100-hour war, we found tactical intelligence to be very good.

21 I was with the US 1st Infantry Division, which conducted a deliberate attack through the western end of the prepared Iraqi defense, then joined the rapid advance across Iraq and Kuwait. Our knowledge of enemy positions and capabilities for the initial attack was exception - individual fighting position detail. It was confirmed hours before the attack by British RPVs. Thereafter, we had little information other than tactical intelligence.

22 Intelligence was detailed and timely. We had access to national intelligence gathering assets which allowed us real time updates on enemy location, movement and size. Since we were an air defense unit our intelligence interests were focused on fixed and rotary wing assets. Due to our liaison locations we knew when any enemy aircraft moved and where it flew and landed. Could not have asked for better.

23 -Timeliness in the Intelligence is the problem. The higher echolous concentration on the first mission left a void in the intelligence on subsequent operations/engagements.

-Lack of _____ left the intentions of the enemy extremely vague.

24 Adequate on Red Sea targets/objectives.

25 No answer

26 Received 1:50,000 overprint maps with enemy locations two weeks before G-day. Maps were updated three times per week until G-day. After G-day updates were sketchy. Usual update was by type unit given in four-digit (1000m) reference pts. Data was about 80 percent accurate at locations checked.

We moved so fast it was hard to keep updated intelligence.

27 _____ of Capabilities was superb. Intentions were reshaped as the air campaign focused on tactical forces, the size of the AOR created problems in intelligence dissemination.

28 Capabilities--good. Intentions--I got best intell from POW--they all said they would not fight, our intell sources said they would.

29 Adequate--Iraq possessed much greater capability to unleash overwhelming lethal combat power than they actually demonstrated. The morale, will to fight was badly beaten by USAF.

30 Would have liked to have more satellite/aerial photos. I worked with stuff taken in November 1990. It lacked resolution and it wasn't current.

31 Great dissemination prior to commencement of ground war.

32 The enemy capabilities were well known because of:

- lessons from Iran-Iraq War
- equipments
- Soviet tactics

The enemy intentions were only _____:

- offensive through Saudi Arabia (Khafgi battle ?)
- defensive only (terrain organization building ?)
- value of leadership, motivation of soldiers before

attack (?)

33 Overall intell summaries were adequate.

Generally, Iraqi brigade locations were usually fairly close but not exact.

Locations of tank and artillery bns was poor. In one instance, I received imagery after an attack--the imagery was available at Corps.

Overall, I believe that intell assets had very accurate info on size, locations, weapons systems, etc. The problem was dissemination--maneuver commanders at bde and bn often never received the info.

34 On the whole very adequate--felt we knew very well their capabilities. Their intentions were not as clear.

35 No answer

36 Intel was poor. I commanded a field artillery battalion in the 82d Airborne Division. The Infantry Brigade I supported was attached to the French 6th Light Armor Division. Our intel officers were not familiar with the French intel system. And, even though we had liaison officers working in each others headquarters, we still did not get all the information we needed.

37 Early on enemy capabilities were overrated. As ground war was about to begin we had very clear picture of threat's capabilities and intentions.

38 No answer

39 We seemed to never have enough information. As it happened, based on the events that transpired, we did not need more intel than we had. We would have liked to have had more but we didn't in the end really need it. When we were in Saudi on the border there was not enough information about what we would face across the border. When we were sent through the breaches behind the 1st Inf Div we had adequate intel for that operation.

40 As an intelligence officer in an intelligence command this is a difficult question. We knew a lot about capabilities and had numerous estimates of intentions. These estimates were fairly accurate in hind sight.

41 Our mission was deep in enemy rear. Knowledge of terrain, enemy en route, ADA, and enemy forces were not sufficiently detailed. Army needs to acquire large amounts of simple, cost-efficient, aerial drones to get tactical intell down to battalion level.

42 Excellent

43 I was not happy with the level of detail of intelligence information available to my battalion. Prior to G-day, the order of battle and strength changed on a daily basis. I am fairly confident that the level of detail was available. It was a matter of dissemination priority and given my battalions initial mission and the area, that area did not have priority initially.

44 Excellent. Commanded a helicopter unit. We had full info to location/type ADA threat.

45 Intelligence in my area was very weak. Our battalion went deep into Iraq (125 miles from Baghdad). Because all the intel assets of collection effort were focused on the Kuwait-SA border, we could not get intel until 3-4 days prior to our assault.

46 It was inadequate due to it not being available in a timely fashion. I refer specifically to availability of LANDSAT photos and their respective analysis. We needed to know if minefields were present in our area--1st Inf. Division--or not. Because information was lacking--we planned "worse case," in other words--for a deliberate breach.

47 During my time with 1st Inf Div (VII Corps) prior to Desert Storm, we got a lot of intelligence data although it proved to be inflated as we started the attack.

48 Not good, slow. Best info from aviators returning to Farps.

49 Very good. While intelligence may have at time been slow, when received the intelligence was very good. The intelligence data provided more than enough information to make good decisions.

50 Enemy capabilities and intentions generally well known.

What was difficult to ascertain was specific unit dispositions and capabilities on a timely basis at division/regimental level (18th Airborne Corps).

51 Fairly sketchy--Marine Corps had a less _____ intel system from the Army.

52 Battlefield intelligence was adequate but by no means outstanding. Significant battlefield intelligence was generated by corps and ----- above corps. However, the means to provide that information to non-divisional units in a timely manner was poor.

53 Pretty good, but it turned out we had overestimated the enemy's capabilities (or underestimated our own), especially after the air campaign.

54 I commanded a Egr combat Bn (heavy) with _____ capabilities. I got my intel thru the corps eng bde and thru the supported units. It met my needs, though it took an aggressive S2 to get info in some cases.

55 Intelligence was adequate prior to crossing the berm. Our 1st objective was the Division HQ for the Iraqi 26th Infantry Division. I had overprinted 1:50,000 maps of the entire position as well as aerial photos. The intelligence was 7-10 days old when we attacked, however, so we didn't know exactly how/if the position had been reinforced.

Q09 HOW ADEQUATE WAS THE BATTLEFIELD INTELLIGENCE ON ENEMY TERRAIN AND OBSTACLES? PLEASE EXPLAIN HOW/WHY IT WAS OR WAS NOT ADEQUATE.

01 The terrain data in Kuwait was adequate. The info for the areas in Iraq was not available. We were unsure of the hazards which our forces would face prior to the attack. I _____ was slow in responding to all our needs and maps were incomplete. Front line obstacles were well defined.

02 N/A

03 In hindsight--it was very good. In our AO--some discrepancies--platoon strongpoints turned out to be battalion positions.

04 Battlefield intelligence on obstacles was accurate--there were none. Intelligence on terrain was generalized and until I crossed over it I didn't really know what to expect. Wet conditions hampered movement on several occasions, but did not prove insurmountable.

05 Inadequate. We had no maps and no detailed lay down of the Republican Guards which was our objective.

06 Not adequate! Detailed enemy terrain data was not available to the battalion. A key ridge that split my task force from my left flank task force was not on terrain maps. It proved to be a well-defended position. Enemy obstacles identified by aerial photographs could not be "fixed" on terrain maps because they had no _____ points. Photos were days old and we (my bde) eventually relied on British photos _____ by their drones. I never received the answer to my #1 Cdr's Pir: "How wide and how deep is the first enemy trench?"

07 Intelligence for air maneuvers was good.

08 Adequate.

09 No answer

10 Adequate. G2 briefings every day.

11 Our intelligence did not pickup the different Iraqi bunker positions in our landing zone sector.

12 1. Terrain info was good. Obstacle info was not as good.

2. After the first day of the ground war, better battlefield intelligence was disseminated.

3. Unit scouts were accurate in their reporting.

13 Very poor--terrain trafficability was not accurate at all causing maneuver difficulties and adjustment of operations plans. Aerial photo interpretation and route selections were very difficult.

14 No answer

15 Quite adequate--was in an aviation unit where it was not a significant factor compared to ground troops.

16 Prior to Desert Storm, we had imagery of Iraqi strongpoints and trenches. Both were very detailed enough to build training aids for rehearsals.

17 Terrain assessments were correct.

18 No answer

19 Adequate for my purposes.

20 Very good! Don't know why--maybe it was because of "picto" intel capabilities showing us what areas looked like. We made our own conclusions (S-2, S-3, & Bn Cdr) on what the enemy would do. We were right; they ran and didn't fight.

21 Extremely good concerning the forward defense lines. We had little information regarding positions deeper in Iraq until we got there. In my support battalion, little of this info reached us. We were given guides to get us through minefields and an infantry company to escort through a defended area. There were no engagements by the time we arrived (4-8 hours behind our brigade).

22 Same. We knew and had pictures of unit locations down to individual foxholes. Hourly updates kept us informed of any changes in the enemy status.

23 Good initially, however, after we started moving the intell was not keeping pace.

24 N/A

25 No answer

26 Terrain was no problem. Obstacles info was accurate, but overstated the difficulty of the obstacles. For example, some "fire trenches" were actually empty ditches and double berm sand walls were easy to breach. We encountered no minefields in my sector.

27 Superb, everything was known.

- 28 Poor--never near real time
 --confused roads with oil trucks
 --not _____ at task force level
- 29 Adequate--weather was a tougher variable to predict with greater consequence than terrain and obstacles. Weather forecasting was marginal (quality).
- 30 SAT photos lacked resolution to see exactly what I was assigned to seize.
- 31 Poor--Once ground war commenced, rate of movement precluded further receipt of intel.
- 32 Very well know--because of: _____ observations and photography and air _____ from border (S.L.A.R).

The moves of units was followed day per day.

- 33 Very accurate. Tank ditches, berms, and even most minefields were accurately plotted in my sector.
- 34 Excellent--overhead photos and good "worse case" assessment of obstacles. If anything, terrain turned out more in _____ than we had planned for. With regard to enemy locations, 2 hours before my first contact in the Emphrates River Valley I received 4-digit grid locations of the center of mass of 5 enemy infantry battalions. After the fight I confirmed the locations correct to within 800 meter average.
- 35 No answer
- 36 We had good overhead photography provided from both French and US systems.
- 37 As part of XVIII Abn Corps we had less clear picture of enemy positions until just before ground war. Never certain how much resistance we would meet after initiation.
- 38 No answer
- 39 Not enough, but see #8.
- 40 Getting sufficient good quality maps was a problem. Some imagery was used to supplement or as map replacements. Long range reconnaissance was used to collect critical terrain data. Most obstacles were known and rehearsals were conducted against these obstacles.
- 41 Adequate. Could have been better. We were in desperate need to get more info on soil consistency, road trafficability, and cross-country mobility.
- 42 Excellent.

43 No answer

44 Good. _____ due to AH64 video

45 It was adequate. We had humint assets in the Euphrates River Valley to tell us what the terrain was.

46 Same answer as #8.

47 Terrain info was good; obstacles, like the forces, were not as detailed as we had expected based on intel we had received.

48 Terrain good--shortage of maps in AV6--Dec obstacles--OK--not much out there.

49 Not used by my unit.

50 Maps were a great difficulty at times--scale desired either 1:100,000 or 1:50,000 for battalion through division level plans and ops.

Terrain info generally well provided (including intel assessments).

Obstacles fairly well understood in advance.

51 Good--Only limited by timeliness.

52 The battlefield intelligence on enemy terrain and obstacles was very limited. We did not have a very clear picture of the enemy sector. The information that we did have proved to be inaccurate once we crossed the line of departure.

53 Very good--was exactly what we expected. Combat engineers were absolutely key to quality of MSR's (main supply routes).

54 Engr Ops--well rehearsed--good photo intel.

55 See question #8.

Q20 AT WHAT POINT IN THE ENGAGEMENT DID YOU CONCLUDE THAT THE ENEMY'S WILL TO FIGHT WAS BROKEN? WHAT APPEARED TO BE THE REASON FOR THIS BREAKDOWN?

01 Actually just before the ground war began. The forces which were pastured to our front showed a general tendency to begin to unravel. Their C2 became less effective and their response to aircraft overflights non-existent. They were overmatched and they knew it. The Iraq army was overrated by the coalition and were not up to the task. Not a trained or well led army!

02 No answer

03 First day of the ground war. Iraqi battalion surrendered after 2 hours of fighting with a Battalion of our Division.

04 It was apparent to me by the afternoon of the second day of the ground war that the enemy's will to fight was broken. Despite isolated pockets of resistance, it was obvious the enemy's defenses were crumbling. I can only speculate on the reason for this breakdown. Among possible explanations lack of logistical support. Many prisoners of war were hungary. Lack of belief in the cause and their leaders. Finally, I believe most of the Iraqis had never been subjected to warfare in the manner delivered by coalition forces and they viewed the situation as hopeless.

05 G+2 first armored battle. Wholesale surrender once our tanks entered the fray.

- 06
- 1.
 2. Our _____ artillery forces.
 3. Slack of our armor force. The

07 After the first day of the ground war when the tanks were summarily destroyed almost at the coalitions total discretion.

08 Day 6 minus 1 (we went early w/6th _____. There was no resistance!

09 G-Day.

10 1st day G. Iraqi soldiers surrendered rapidly.

11 When the white flags came out was when we knew the position was going to surrender. The combination of CAS (F-16'/A-10's), apache fire, artillery fire (105) and the surprise of enemy paratroopers in their rear seemed to overwhelm the Iraqi battalion commander.

12 On day 2 of the ground war when it was reported that Iraqi forces were withdrawing and I thought that same Iraqi forces were fighting a delay war to gain time. Also when a sizeable number of POWs turned up on 25-26 February 1991.

13 Day three after having established blocking positions on Highway 8--most elements moving thru put up very light resistance then surrendered. Elements in _____ barely resisted during raid.

14 When the artillery out shot his artillery--ground forces could not deal with the death and destruction caused by precise

artillery hits and they surrendered or fled leaving much of their equipment behind.

15 Day 1--units were surrendering upon initial contact.
Aviation units were capturing Iraqi bns.

16 When we first made contact, they immediately threw up their hands and surrendered. Their will to fight was broken long before the ground campaign began.

17 The enemy's will to fight was not broken until his catastrophic defeat.

18 After turning east on Euphrates River--4th day of war.
Leadership abandoned soldiers.

19 It appeared to me that, before the ground war, the enemy had decided to not fight. They were waiting to surrender as soon as the ground war kicked off, as evidenced by the large numbers who surrendered at the onset of the ground war.

20 Before G-day, our Bde and the Bn (I served in) had operated inside Iraq and we realized (concluded) through numerous prisoners that they would not fight.

21 After the initial attack, when we saw so little resistance, so many POWs, and the terrible condition of the Iraqi soldiers. I felt it was all over but for cleaning up.

22 During the first two days of ground combat. No significant resistance, massive numbers of prisoners of war surrendering without a fight. No counter fires or air/artillery strikes to slow our movement. Poorly prepared defenses/lack of logistics and support. All led to this conclusion.

23 The morning of 27 February--the overwhelming number of POWs surrendering convinced me the will to fight was gone.

24 N/A

25 No answer

26 Implicitly, on G-day when we heard of the large prisoner hauls all over the battlefield. On G+4, my unit overran three brigade (+) defensive positions without incurring casualties or effective resistance. We knew 30 minutes after we started the movement.

27 When the 24 ID engaged the RGFC.

28 Several _____ after I crossed Iraqi border--when I was able to move _____.

29 Day G+2. USA rapid movement north with minimum resistance (especially in 101st Abn Div (AASCT) area of operations.

30 After 48 hours into ground war, I knew. I suspected as early as 20 February.

31 Appearance of prisoners. Total lack of resistance. Total lack of enemy air threat. Success of air war seemed to create conditions for breaking of enemy's will.

32 In the second day of ground operation, when prisoners were more and more numerous and among them no "commanders" above battalion commanders. The _____ of breakdown--effectiveness of air campaign, of Psyops; the escape of _____ commanders.

33 Six days before the ground war. We conducted two attacks (over 72 hour period) against units in vicinity Al Salmar airfield. Iraqi units fired on us, then ran or surrendered when we engaged. I believe the air campaign plus their inability to hit us at our standoff range (6-8 km) caused them to breakdown.

34 Heading east through the Euphrates River Valley toward Basrah and seeing thousands of Iraqi soldiers walking east in groups of 3-10, asking for food and water.

35 No answer

36 We attacked on G-day-minus-one to secure a 150 foot escarpment on the Saudi-Iraqi border near Rafha. We captured each of our three objectives without firing a shot.

On G-day we advanced along MSR Texas toward As Salmon. The enemy only fired small arms and 82mm mortars for a few minutes before they began surrendering in squad and company formations. By the end of G-day the combined US-French force had captured approximately 800 prisoners.

The Iraqi soldiers had been without officers or decent food for over 30 days. They just wanted to get safely off the battlefield.

37 During mid-February as units began to defect, it became apparent _____ will there was had dissipated.

38 No answer

39 When the lead elements of the 1st combat units had such great success and when Iraqi soldiers began to surrender in groups of 50 or more on G-day.

40 We knew before the ground war started that there was little fight in many of the divisions. The unknown was the Republican Guards Corps which we expected to put up a strong well-coordinated attack.

41 Their failure to adequately respond to my brigade's assault in the Iraqi rear, within the first 12 tenuous hours, indicated to me how completely overwhelmed they were.

42 25 February. Officers were gone.

43 My battalion was part of a US field artillery brigade that was supporting the 6th French Light Division. When we started our assault north, we received enemy artillery fire, that fire was met with overwhelming counterfire from us. We only received enemy artillery on 3 or 4 occasions. After we stopped receiving artillery fire, I knew the enemy had lost his will to fight.

44 No answer

45 When we landed on the Euphrates River Valley. They were so surprised that we were that far north so quickly (Ground Day) that they quickly lost the will to fight.

46 After the first few hours when so many began to surrender. The reason was the Iraqi soldiers did not have a sense of purpose--they were not motivated.

47 When the reports, about 3rd day, started coming about the Rep. Guard units retreating in mass.

48 When time was compressed--only then--they could not see the battlefield--up front troops were untrained--momentum built couldn't stop. Tactics--operational lousy-----.

49 As soon as we broke across. The soldiers in our sector never showed any desire to fight.

50 The appearance of massive numbers of prisoners, early on--men wandering in the desert with no equipment or enemy units for miles--the desert or had started well before the ground attack commenced.

51 Within 24 hours (G-day). Command and control of Iraqi's was non-existent.

52 The third day when numerous prisoners were taken. Soldiers eagerly surrendered despite the fact that they had been told that the Americans killed their prisoners. I think the primary reason for the breakdown was the fact that most of the soldiers did not believe in the war and did soldiers in my unit were well trained and highly motivated. We definitely had an edge in terms of technology, air power and sustainment capability.

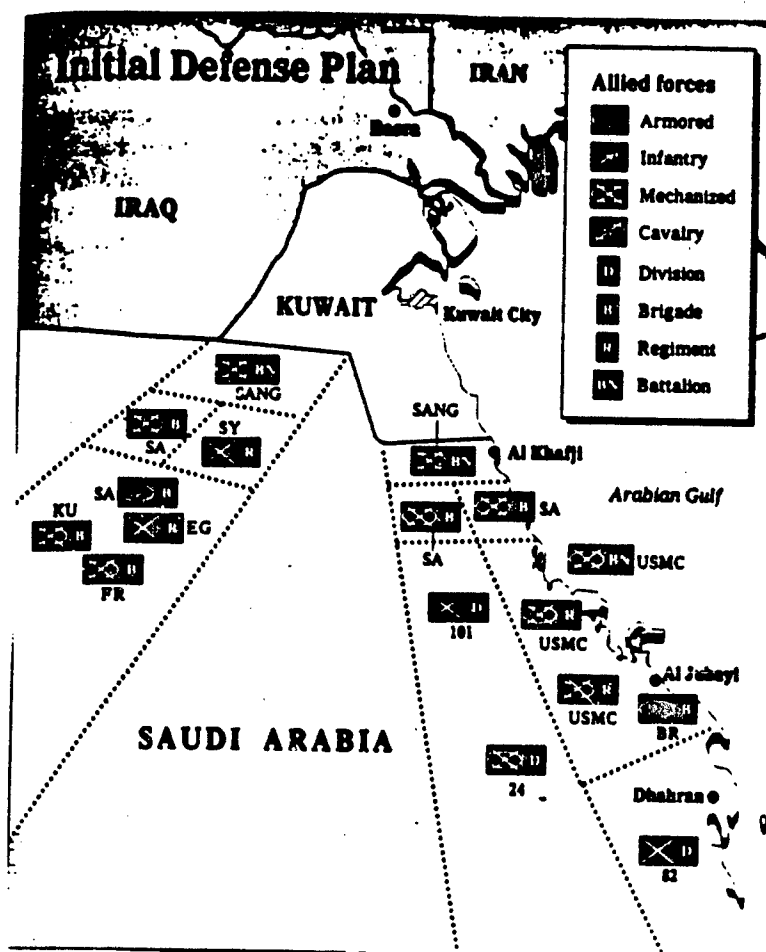
53 G-day One. Massive surrenders as a result of technological mismatch, poor leadership and knowledge that they were wrong!

54 1. Ground attack on day 3, 26 February--when I saw the devastation of the battlefield. No US debris--all Iraqi.

2. Khofgi--knew we were going to make a decisive victory, based on how poorly the Iraqi armored attack went and how few (relatively) casualties the Saudi/Kuwaiti's took recovering Khafgi.

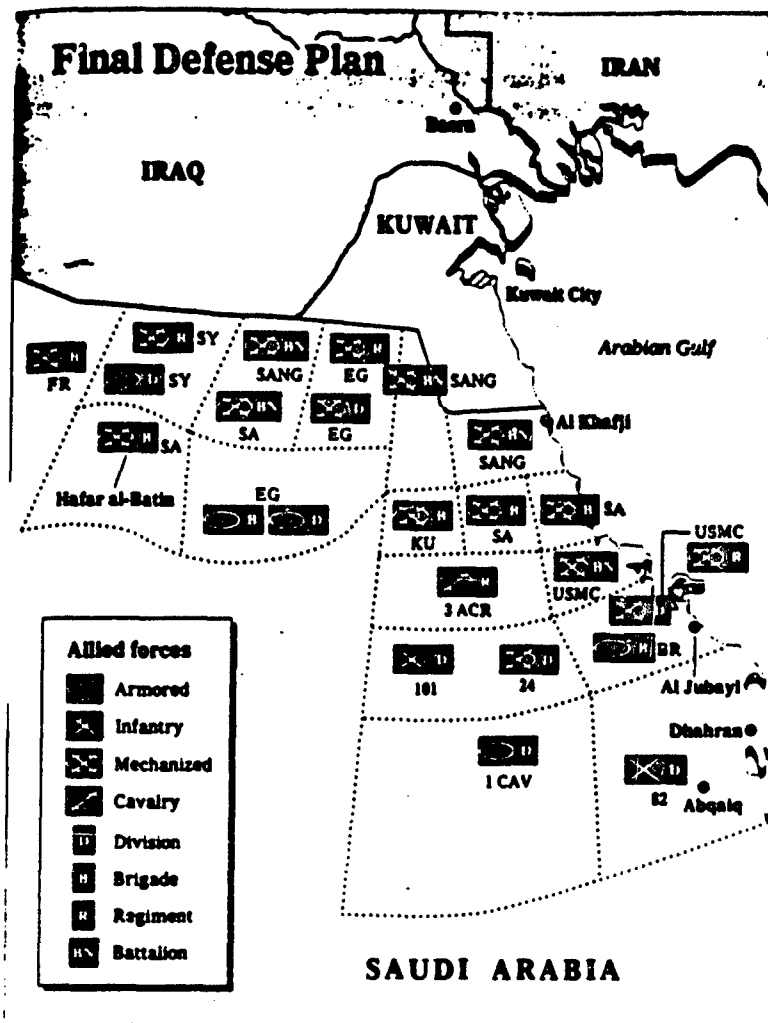
55 On the morning of 27 February, we began encountering large numbers of enemy forces retreating north out of Kuwait. By that time we were well into their rear area. They were trying desperately to avoid encirclement.

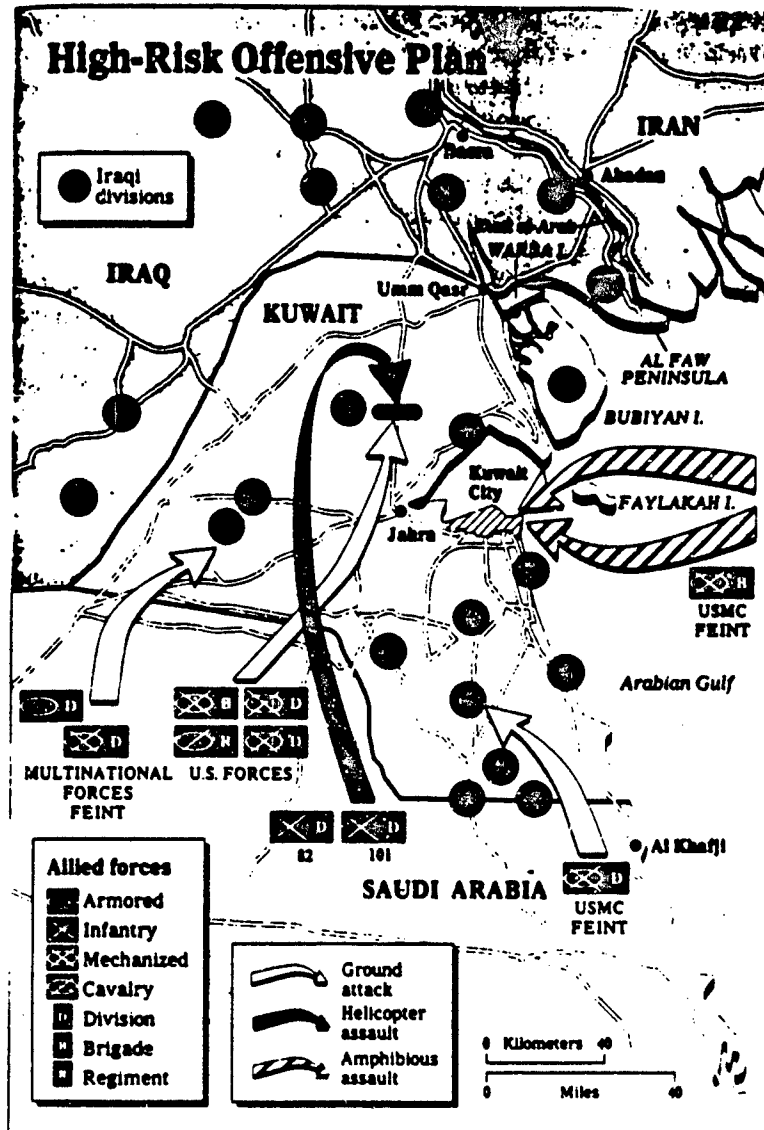
MAP 1



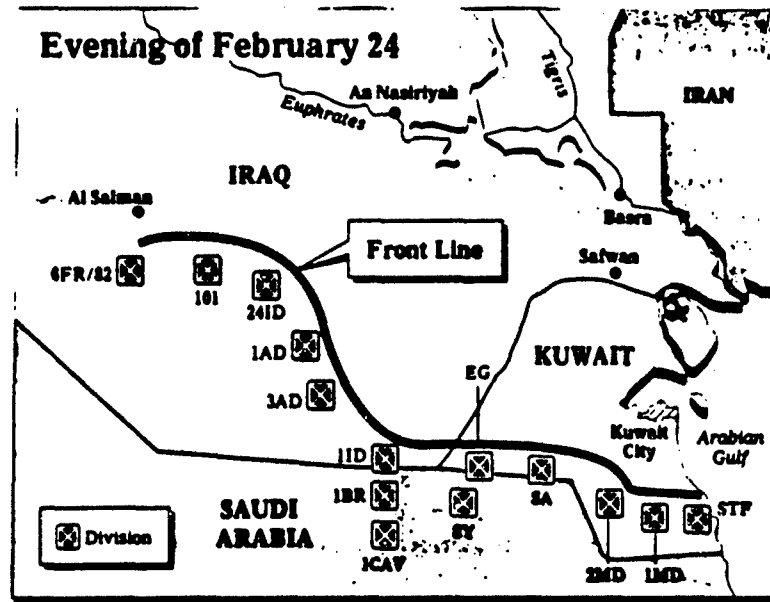
1. Maps 1-7 - General Norman Schwarzkopf's Book.
2. Figures 2, 4, 5 - Douglas Craft's Book.

MAP 2

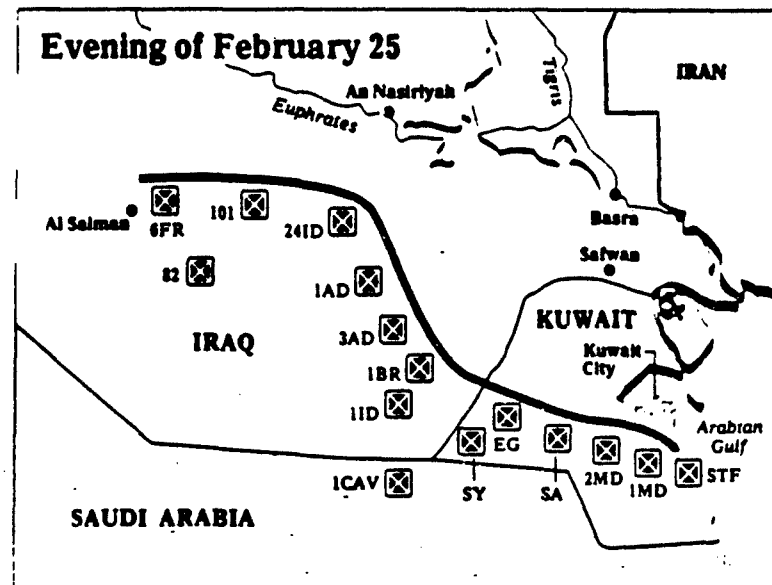




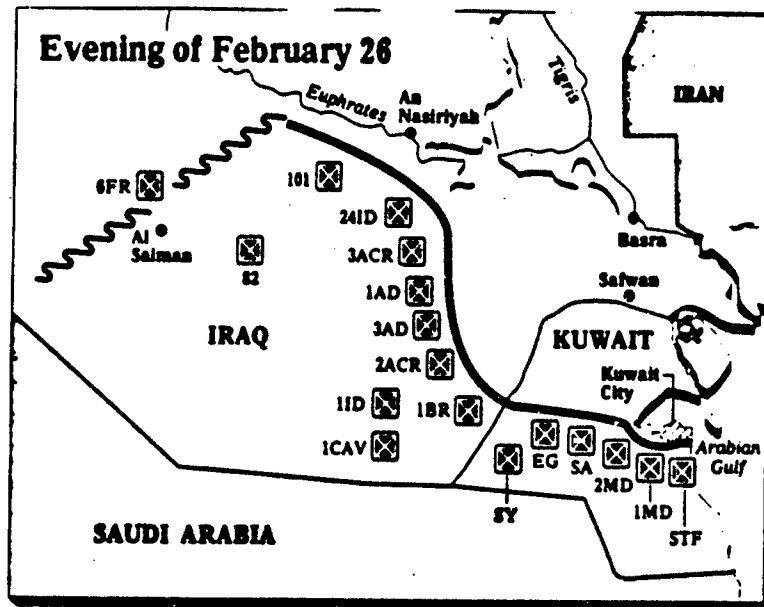
MAP 4



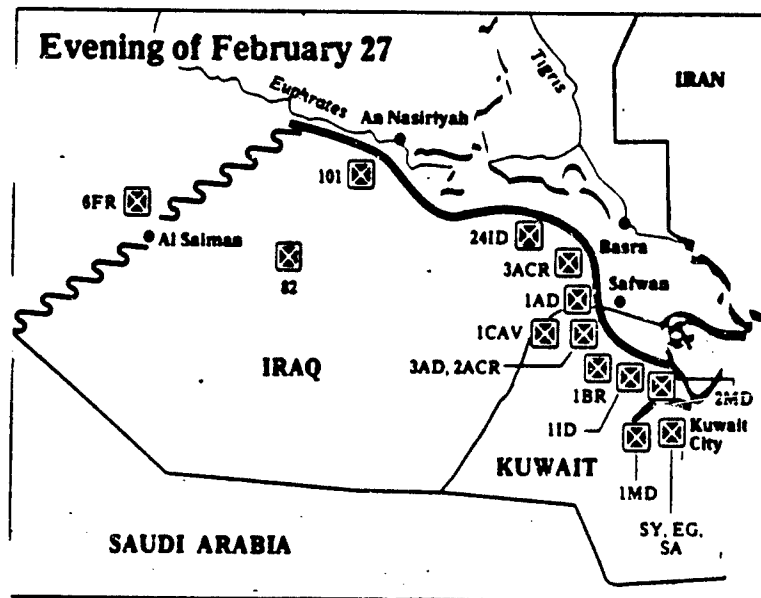
MAP 5



MAP 6



MAP 7



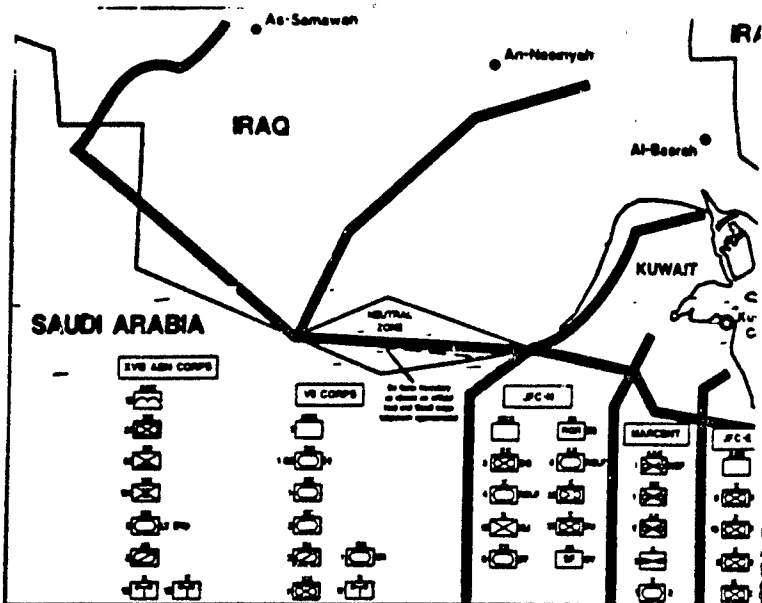


Figure 2. JFC-N, JFC-E, and Corps Boundaries.

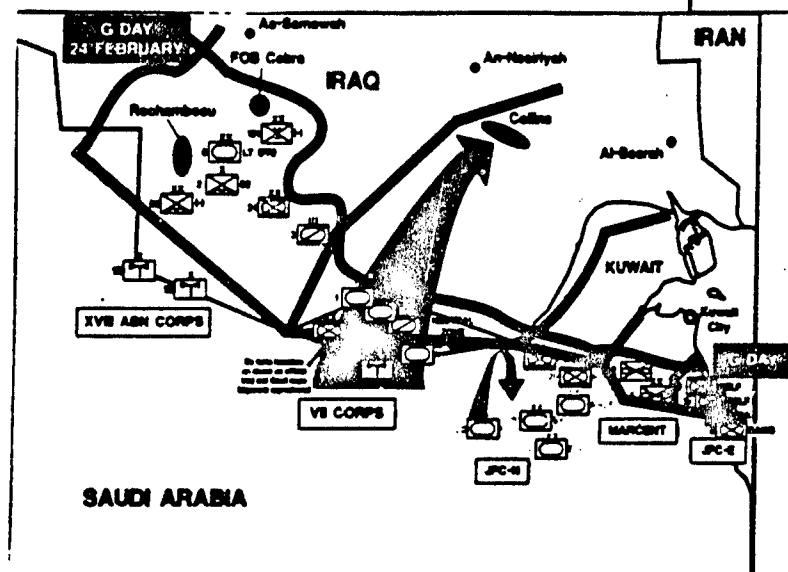


Figure 4. Coalition Disposition, G-Day.

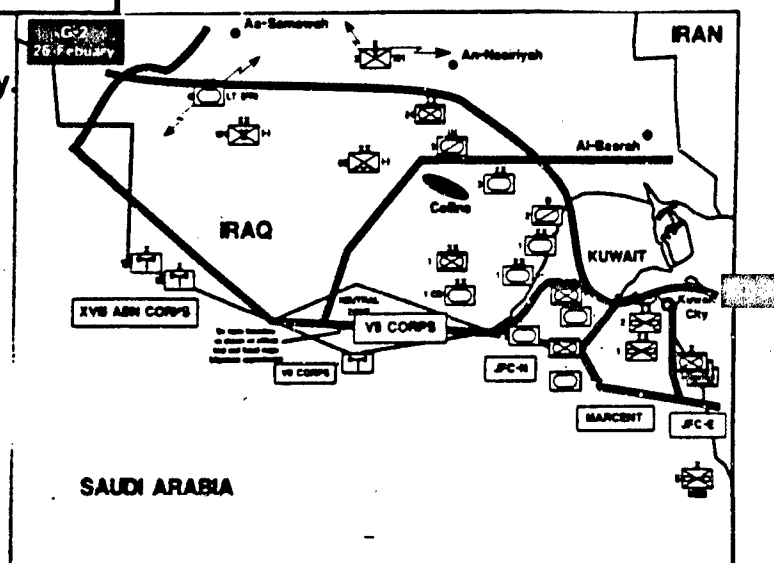


Figure 5. Coalition Disposition, G+2.