

AD-A236 581



DTIC
ELECTE
JUN 1 1991
S C D

2

NAVAL WAR COLLEGE
Newport, RI

IRAQI MILITARY EFFECTIVENESS IN THE WAR WITH IRAN

by

W. Jack Dees

Major, U.S. Army

A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Operations Department.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signature:

11 February 1990

Approved for Release by NSA on 05-08-2014 pursuant to E.O. 13526



REPORT DOCUMENTATION PAGE

1a. REPORT SECURITY CLASSIFICATION UNCLASS		1b. RESTRICTIVE MARKINGS	
2a. SECURITY CLASSIFICATION AUTHORITY		3. DISTRIBUTION/AVAILABILITY OF REPORT DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited	
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE		5. MONITORING ORGANIZATION REPORT NUMBER(S)	
4. PERFORMING ORGANIZATION REPORT NUMBER(S)		7a. NAME OF MONITORING ORGANIZATION	
6a. NAME OF PERFORMING ORGANIZATION OPERATIONS DEPARTMENT	6b. OFFICE SYMBOL (if applicable) C	7b. ADDRESS (City, State, and ZIP Code)	
8a. NAME OF FUNDING / SPONSORING ORGANIZATION		9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER	
8b. OFFICE SYMBOL (if applicable)		10. SOURCE OF FUNDING NUMBERS	
8c. ADDRESS (City, State, and ZIP Code) NAVAL WAR COLLEGE NEWPORT, R. I. 02841		PROGRAM ELEMENT NO.	PROJECT NO.
		TASK NO.	WORK UNIT ACCESSION NO.
11. TITLE (Include Security Classification) Iraqi Military Effectiveness in the War with Iran (U)			
12. PERSONAL AUTHOR(S) Maj W. Jack Dees, USA			
13a. TYPE OF REPORT Final	13b. TIME COVERED FROM TO	14. DATE OF REPORT (Year, Month, Day) 11 Feb 1990	15. PAGE COUNT 48
16. SUPPLEMENTARY NOTATION A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Operations. The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.			
17. COSATI CODES		18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)	
FIELD	GROUP	Iraq; Iraqi Military; Iraqi Army; Iraqi Air Force	
		Iran-Iraq War; Iraqi Politics; Saddam Hussein; Iraqi	
		Strategies; Arms Sales; Chemical Weapons	
19. ABSTRACT (Continue on reverse if necessary and identify by block number) The effectiveness of Iraqi military activity is evaluated based on a previously published analytic framework. Political effectiveness is judged as high, for the Armed Forces enjoyed virtually unlimited access to financial, material, and manpower resources. Iraqi strategic effectiveness was initially poor, but re-assessment led to more viable strategies over the long term. Army operational performance improved substantially over the course of the war, but Air Force campaigns were generally ineffective in achieving operational goals. Increased emphasis on professional competence accounted for much of the operational effectiveness of the Army in the later years of the war. Tactical effectiveness throughout the Armed Forces was marked by steady, gradual improvement, especially in the Army. In the Army's final campaign, conducted in the spring of 1988, its leaders and soldiers displayed great operational and tactical skill.			
20. DISTRIBUTION AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT <input type="checkbox"/> DTIC USERS		21. ABSTRACT SECURITY CLASSIFICATION UNCLASS	
22a. NAME OF RESPONSIBLE INDIVIDUAL Col Ted Gatchel, USMC, Chmn, Opns Dept		22b. TELEPHONE (Include Area Code) 841-3414	22c. OFFICE SYMBOL C



Abstract of

IRAQI MILITARY EFFECTIVENESS IN THE WAR WITH IRAN

The effectiveness of Iraqi military activity is evaluated based on a previously published analytic framework. Political effectiveness is judged as high, for the armed forces enjoyed virtually unlimited access to financial, material and manpower resources. Iraqi strategic effectiveness was initially poor, but re-assessment led to more viable strategies over the long term. Army operational performance improved substantially over the course of the war, but Air Force campaigns were generally ineffective in achieving operational goals. Increased emphasis on professional competence accounted for much of the operational effectiveness of the Army in the later years of the war. Tactical effectiveness throughout the armed forces was marked by steady, gradual improvement especially in the Army. In the Army's final campaign, conducted in the spring of 1988, its leaders and soldiers displayed great operational and tactical skill.



Accession For	
NTIS GRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution/	
Availability Codes	
Avail and/or	
Dist	Special
A-1	

TABLE OF CONTENTS

<u>CHAPTER</u>		<u>PAGE</u>
ABSTRACT	ii
I	INTRODUCTION	1
II	THE COURSE OF THE WAR	4
III	POLITICAL EFFECTIVENESS	8
IV	STRATEGIC EFFECTIVENESS	14
V	OPERATIONAL EFFECTIVENESS	20
VI	TACTICAL EFFECTIVENESS	28
	Ground Operations	28
	Air Warfare	31
	Chemical Weapons	34
VII	CONCLUSIONS	36
NOTES	40
BIBLIOGRAPHY	43

IRAQI MILITARY EFFECTIVENESS IN THE WAR WITH IRAN

CHAPTER I

INTRODUCTION

Iraq required eight long, bloody years, but in the end, it prevailed in its bitter war with Iran. Begun by Saddam Hussein in order that Iraq might humble the theocratic revolution in Tehran and emerge as the hegemon of the Gulf and the Arab world, the war became a struggle for survival of the country and its Ba'athist regime. The military effort that eventually saved Iraq, in the beginning nearly brought about its collapse.

This analysis looks at the effectiveness of Iraqi military activity during that war. The framework of analysis employed is borrowed from Allen R. Millett and Williamson Murray of Ohio State University, the editors of a three volume set entitled Military Effectiveness. Professors Millett and Murray developed a structure which is used by other authors to criticize the military performance of the world's great powers from 1914-1945. Their framework evaluates:

- (1) Political Effectiveness - The ability of a military establishment to secure the resources required for military activity.
- (2) Strategic Effectiveness - The employment of national military capability to secure political ends.
- (3) Operational Effectiveness - The employment of large military forces to achieve strategic military objectives.
- (4) Tactical Effectiveness - The use of specific techniques and the employment of specific weapons systems in combat engagements.

The opening phase of the war was characterized by a virtual absence of Iraqi military effectiveness at the strategic, operational and tactical levels. Faulty pre-war assessments, a lack of military professionalism and a dearth of combat experience and training contributed to this poor showing. Only the lack of effective Iranian resistance during the first weeks of the campaign precluded an Iraqi humiliation.

Nonetheless, after the withdrawal from Iran, Iraqi performance was characterized a real and consistent improvements in virtually every facet of military activity. The adoption of viable strategies, a new emphasis on professional competence amongst senior commanders, and the lessons learned from years of fighting contributed to these long term improvements, especially in the Army. The availability of sufficient resources, particularly improved technology, and its effective integration, played the major role in the successful Iraqi defensive effort. The purchase and improvement of SCUD missiles, which proved to be the most decisive weapon of the war, attests to this fact. Only the Air Force proved unable to achieve its objectives, owing to a number of tactical and strategic failings, despite some improvements in combat performance.

Two cautions regarding this effort are in order. First, the secretive nature of the Iraqi Ba'athist regime restricts the number of original sources and places limits on the credibility of information regarding the war. Much of the information, especially regarding the political workings of Saddam Hussein's inner circle and the specific tactical issues addressed here are often speculative, and sometimes

contradictory. Secondly, this is an evaluation not just of the Iraqi armed forces, but of the national military effort as a whole. Due to the centrality of Saddam Hussein to all decision making, one must consider the military decisions taken by political authorities as part of that national military effort.

...

CHAPTER II
THE COURSE OF WAR

From the Iraqi point of view, the war can be divided into three distinct phases. The first, beginning in September 1980 and continuing until the spring of 1982, covers the period of the initial Iraqi attack, the occupation of large border areas in Iran, and the subsequent Iraqi retreat. The second phase, the defensive, began in mid-1982 when Iran invaded Iraq, and it covers the six year period of stalemate on the ground. The third phase, from March to July 1988 covers the final Iraqi offensives which dislodged Iranian forces from Iraq and culminated in the cease-fire.

The invasion began on September 22, 1980 when the Iraqi Air Force conducted a large scale air attack on a number of military targets throughout Iran, causing little damage. The next day five Iraqi divisions advanced into Iran, moving swiftly against little effective opposition. Following several days of advance, these units held up in front of the major cities of Dezful, Ahwaz and Khorramshahr, all in the oil rich and Arabic speaking province of Khuzistan. On 28 September Saddam Hussein, announcing the achievement of his territorial objectives, called for a cease-fire. The Iranians answered by sending their air force into action against strategic targets, thereby widening the scope of the war. The Iraqi Army then attacked Khorramshahr, and dislodged the determined Iranian defenders in a particularly costly action lasting nearly a month. On December 7, Saddam

Hussein again disclaimed further territorial ambitions, and announced that Iraq was adopting a new "defensive strategy."

Both sides subsequently engaged in a number of sharp, but indecisive actions and the situation remained stagnant until early 1982. Beginning in March, the Iranians launched a series of offensives that drove the Iraqi Army back to the border. At Khorramshahr, the Iranians inflicted a serious defeat on its occupiers. After a series of operational blunders, the Iraqis found themselves with some 25-30,000 soldiers cut off in the city. Thousands managed to escape across the Shatt-al-Arab waterway, but over 12,000 surrendered.²

The second phase of the war began in July when the Iranians crossed over into Iraq, apparently intent on conquering some portion of the country and bringing about the overthrow of Saddam Hussein. Throughout the next five years, multiple Iranian offensives pressed down on Iraqi forces all along the border, in battles unprecedented in the post-World War II era for their violence and bloodshed. In the south, the Iranians pushed ever closer to Basrah, capturing the strategic Majnoon Islands oil fields in March 1984 and, in a dramatic victory, the southern tip of the Fao peninsula in early 1986. The only notable Iraqi offensive success came in May 1986 with the capture of the Iranian city of Mehran, east of Baghdad. However, the Iraqi forces holding it found themselves in highly exposed positions and were forced to withdraw after only six weeks.

The strategic war began in earnest during this period, as Iraq used increasingly complex weapons systems to attack both economic targets inside

Iran and commercial shipping carrying Iranian oil. Although Tehran at this time remained out of range of Iraqi SCUD missiles, it fell victim to aircraft attacks as other cities closer to the border fell victim to the missiles. In 1986 in particular, the Iraqi Air Force became more assertive, hitting targets throughout Iran, enjoying some limited success in slowing oil exports. This period also saw the first use of chemical weapons by Iraq. Although employed sparingly, and generally only as weapons of last resort, the Iraqi Army found them to be useful in defeating massed Iranian infantry.

The tide of the war turned in January 1987, when the Iranians undertook massive assaults aimed at capturing Basra. Western sources began to question whether Iraq had not lost the war.³ In fact, those offensives represented Tehran's last effort to conquer Iraq. Shortly thereafter, the U.S. began its Kuwaiti tanker escort operation, eventually engaging the Iranians in a mini-war in the Gulf. At the same time the Iraqis were nearing the fielding of a locally modified, longer range version of the SCUD, capable of reaching Tehran. In other areas, the Iraqi armed forces were realizing the benefits of a number of technological and doctrinal improvements.

These factors coalesced in early 1988, leading to Iranian collapse and a cease fire. Fao fell in March, and in a well-fought campaign carried out over the ensuing four months, the Iranians were driven from Iraq. In March and April the Iraqis unleashed the War of the Cities, firing over 200 of their new SCUD missiles, most into Tehran, creating terror in the city.

In a series of limited, but one sided, engagements in late 1987 and early 1988, the U.S. Navy swept the Iranians from the Gulf. With pressure on all sides, the Ayatollah Khomeini agreed to a United Nations sponsored ceasefire.

CHAPTER III

POLITICAL EFFECTIVENESS

Murray and Millet define political effectiveness as the ability of a military establishment to "consistently secure the resources required to maintain, expand, and reconstitute itself".⁴ Such resources include shares of the national budget, access to equipment and technology, and the availability of manpower. The Iraqi military received virtually unlimited access to the resources it required. An understanding of the relationship between the Baghdad regime and the armed forces is necessary if the political effectiveness of the military establishment is to be properly understood. A brief synopsis of that relationship comprises the initial part of this analysis, followed by a detailed look at the extent of the success of the Iraqi military in securing its requirements.

It should be noted at the onset that it is the Iraqi Ba'athist party that controls the armed forces, but that the party, dominated by Saddam Hussein depends upon the armed forces for its survival. This resulted early on in a suffocating degree of political control, undertaken at the expense of military professionalism and competence. After the defeats of 1982, a tacit contract emerged between Saddam Hussein and his military leaders. The officers agreed to Hussein's need for control through patronage and political surveillance, but they and the armed forces were assured, amongst other things, of "unimpeded access to all resources . . . which would then make their agreed tasks possible".⁵ In as much as Saddam

Hussein realized that the survival of his regime depended on the success of the armed forces in defending the state, he insured they received sufficient resources for the task. This not only involved decisions regarding the allocation of internal resources such as funding, it also involved the adoption and coordination of policies and strategies designed to insure the availability of foreign material and support.

An analysis of the Iraqi military budget exposes the astronomical rise in defense spending during the course of the war, as well as the vastly increased share of national income taken by that spending. The data presented in Table I, taken from figures held by the Stockholm International Peace Research Institute (SIPRI) clearly reflect these two trends.

As a percentage of gross domestic product, total Iraqi military expenditures between 1982 and 1985 exceeded that of all other countries. Total constant dollar expenditures for the period exceeded that of Japan, a nation with a large, technologically sophisticated and well-paid military establishment.⁶ SIPRI suggests that these figures are understated, and if this is so, the portion of the Iraqi economy devoted to the war effort very nearly equalled that of the United States in World War II. Clearly, the Iraqi military was afforded adequate financial resources to conduct the war effort.

TABLE I

IRAQI MILITARY EXPENDITURE

<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>
As a % of gross domestic product							
6.9	6.3	12.3	19.0	24.4	29.1	27.5	
In constant 1986 billion \$, U.S.							
8.3	8.6	9.8	15.3	20.0	22.1	16.4	11.6

Source: SIPRI, 1989 Yearbook (Oxford, 1989), pp. 179, 184, 188.

The Iraqis were effective as well in converting this financial commitment into the tools and technology needed to wage the war. Although a domestic arms industry did emerge during the war, its efforts were directed at ammunition production and at upgrading equipment purchased abroad. One important aspect of the Iraqi arms industry was its access to the materials and technology to mass produce chemical munitions. Nonetheless, Iraqi arms production, while undergoing a great increase in capacity and capability, was dwarfed by arms importation in its contribution to the overall defense effort.

The huge importation of weapons that took place owed itself to the political prowess of the Iraqi government. The qualitative and quantitative advantages enjoyed by Iraq were direct consequences of the ability of the Baghdad regime to secure a steady and diversified supply of advanced weaponry. In contrast, Iran was viewed as a pariah state by much of the

world, a situation which greatly complicated its search for weapons sources and grounded its air force for much of the war.

Between 1984 and 1988 Iraq ranked as the largest arms importer in the world, receiving over \$16 billion in weapons, measured in constant 1985 dollars. One-seventh of all arms imports by Third World countries during this period went to Iraq, as did 9% of all arms traded in the world.⁷ The Iraqis were enormously effective in exploiting foreign services of supply and technology.

France and the Soviet Union accounted for the bulk of Iraqi weapons. Short-lived Soviet embargoes on sales to Iraq in 1974 and 1980 had opened the door for the French. Strictly in terms of prices, France was Iraq's leading supplier, with 35% of all sales. The bulk of these deliveries were in aircraft, guided missiles and armored vehicles. Iraq was also France's best customer, accounting for roughly a third of French arms exports between 1981 and 1988.⁸

The Soviet relationship was more complex and more susceptible to changing Soviet political objectives. In the end, the Iraqi leadership obtained much of what it desired from Moscow, and after 1983 the Soviets regained their predominant role in the Iraqi arms market.⁹ (French sales were greater in value, but not in volume, due to the much lower cost of Soviet weapons.) Although much of the equipment purchased by Iraqis was low-end products, such as T-55 and T-62 main battle tanks, this appeared to be Baghdad's choice and not due to any constraints imposed by Moscow. The

Iraqis were able to purchase such advanced weapons as the T-72M tank, the SU-25 Frogfoot, and the MEC-29 Fulcrum.

Iraq also suffered few difficulties in manning this vast military machine. The data in Table 2 attests to the dramatic growth in the Iraqi military in the early years of the war. It has been estimated that at the time of the cease-fire 800,000 Iraqis were serving in the regular armed forces and 5000,000 in the Popular Army.¹⁰ Nearly half of all militarily fit males between 15-49 were in the armed forces.¹¹

TABLE 2
GROWTH OF THE IRAQI ARMED FORCES

	<u>1980-81</u>	<u>1983-84</u>	<u>1984-85</u>
REGULAR FORCES	242,000	517,000	642,500
RESERVES	250,000	75,000	75,000
TOTAL	492,000	592,000	717,500

Source: Anthony Cordesman and Abraham Wagner The Iran-Iraq War (Boulder, Co.: 1990), p. 430.

There was resistance to conscription. Authorities were forced to undertake "recruiting sweeps" in major cities, reports of other resistance was plentiful and desertion from the Popular Army was somewhat of a problem for the regime.¹² Nonetheless, this resistance was insignificant in terms of its impact on manning in the armed forces.

The real cost of manpower mobilization was in the labor shortage it produced. Perhaps 35% of the Iraqi workforce was in uniform as early as

1983. The answer was foreign workers, whose substantial remittances to their home countries represented another cost of the war. This was a price Saddam Hussein's regime was willing to pay, another example of its commitment to fully resource the war effort.

CHAPTER IV

STRATEGIC EFFECTIVENESS

Judging strategic effectiveness requires an evaluation of the methods of employment of a nation's military to secure the political ends of war - the national war aims. These methods of employment constitute strategy, or at least the military aspect of it which predominates in wartime. In the analysis below the various Iraqi strategies are evaluated for their match with the national war aims, by the strategic assessments which formed their underpinning, by their prospect for execution with the military tools at hand, by the strategic decision-making process from which they were formed and by the relationships with external powers which influenced their selection and viability. Two cautions are in order. An examination of strategic military effectiveness is not an evaluation of the appropriateness of the national war aims.¹³ Secondly, it should be remembered that in Iraq especially, the degree of military accountability in strategic decision-making cannot be fully ascertained. As noted earlier, decisions taken by civilian authorities that applied to military concerns are considered as part of the national military effort.

Four Iraqi war aims may be deduced. First, Baghdad sought to contain the spread of the Islamic Revolution, which it considered threatening because of the predominant Shi'ite population in Iraq. Secondly, it sought a reversal of the 1975 Algiers agreement governing the sovereignty of the Shatt-al-Arab waterway. Third, Iraq sought to redress

the regional balance by replacing Iran as the Gulf's dominant power. Lastly, Saddam Hussein sought to bring about the emergence of Iraq as the leader of the Arab World, with himself at the helm.¹⁴

Christine Moss Helms lists the fundamental Iraqi assumptions regarding Iran that, in effect, constituted Baghdad's pre-war strategic assessment:

- (1) The Iranian military had been irreversibly weakened by the chaos of the revolution.
- (2) A concerted Iranian response to the invasion was unlikely due to the political divisions in Tehran.
- (3) The Islamic revolution was not wholly supported by Iran's civilian population.
- (4) Iran would remain isolated from the Gulf states and the superpowers.¹⁵

This assessment led Baghdad to pursue a strategy of limited war, which is evident in the limited objectives assigned to the Army and in the lack of economic targets attacked in the initial airstrike. One writer describes this strategy as a demonstration of strength, designed to impress Tehran with Iraqi might:

" . . . the war was to be a brief operation which would decisively convince Iranian leaders that in the long running competition between the rulers of the two countries, the Iraqi leadership now had the upper hand."¹⁶

Clearly evidenced by his September 28, 1980 call for a cease-fire, Saddam Hussein hoped to strike swiftly and decisively, expecting Tehran to quickly accept his terms.

The failure of Iraqi strategy lay in Baghdad's faulty pre-war assessment. In rejecting the cease-fire and widening the war to include

economic targets, the Iranians refused to follow Saddam Hussein's script. The Iraqi assumptions regarding the chaotic situation in Tehran, the response of the civilian population and the residual military capabilities of Iran were clearly flawed. By mid-1982, Saddam Hussein's war of demonstration had become a war of survival.

In recognition that the war had deviated from its intended course, Iraqi war aims were revised. Baghdad consistently sought a cease-fire, and would have accepted a return to the pre-war political and territorial status quo. The supporting military strategy evolved slowly, but its essential nature was that of a static, defensive ground war, eventually conducted in conjunction with attacks on strategic targets. The underlying rationale was that:

" . . . the Iraqi armed forces would demonstrate . . . that any Iranian military effort was doomed to fail. Meanwhile, the Air Force would demonstrate its capacity to damage Iran's economic infrastructure and shake the faith of the Iranian population in their rulers' claims to be able to protect them from the ravages of war."¹⁷

All circumstances considered, Saddam Hussein had few strategic alternatives, and it was precisely this approach which ultimately brought the war to its conclusion. If there was a fault in this strategy, it was that until late 1987, Baghdad lacked the means to influence the determination of Iran to prosecute the war. The country could be defended, but Iranian forces could not be driven from Iraq, and Khomeini could not be coaxed into a cease-fire.

One writer points to a shift in Iraqi strategy which occurred very late in the war, "the widening and deepening of the conflict."¹⁸ The widening of the war was accomplished through Iraqi initiation of the tanker war, which led to Iranian reprisals against third party shipping, and eventually American intervention. American intervention was, of course directed against Iran and worked to Iraq's favor. The deepening of the war refers to qualitative expansions - the use of chemical weapons, the more aggressive employment of the air force against economic targets, and finally the introduction of long-range missiles capable of striking Baghdad. The widening and deepening of the war did in fact bring about its end, but it is incorrect to see it as a shift from the defensive strategy. The tanker war did not have as its first priority bringing the United States into the conflict - it was taken to new heights by the Iraqis in order to wreak havoc on the Iranian capacity to sell oil. The deepening of the war only reflected improvements in Iraqi material and combat performance. These events should be viewed as the successful culmination of the defensive strategy.

Strategic decision-making was centered entirely around the personage of Saddam Hussein. The centrality of his role in the process of strategic choice cannot be overestimated. The key factor to be considered in evaluating strategic decision-making was that the strategies adopted were aimed first at preserving the role and place of Saddam Hussein and his Ba'athist inner circle, and only secondarily at efficiency in prosecuting the war effort.¹⁹ Here lay the basis for the strategic defensive strategy

pursued on the ground up until the very end of the war. Despite the potential for success inherent in more aggressive, offensive operations, the regime shied away, viewing the cost in casualties as beyond the safe threshold for its survival.

For Iraq, coalition warfare considerations had minimal effect on strategic effectiveness. In the main, Iraq received financial and material assistance, as well as guaranteed sources of weapons and technology. In return Baghdad provided what its supporters desperately sought - denial of victory to Iran. Nonetheless, Iraq did undertake a number of limited political moves in order to guarantee continued access.

The Arab Gulf states provided substantial financial support to Iraq, although to varying degrees and despite little enthusiasm for the Baghdad regime. Kuwait additionally became a transshipment point for Iraq bound goods, but it did limit its role due to its vulnerability to Iranian attacks.²⁰ Jordan played a prominent role in supporting Baghdad, especially by opening up Aqaba as the major transshipment point for Iraq. Egypt's support, including substantial arms deliveries, technical assistance and the provision of a large labor force, required of Baghdad support for its efforts to reintegrate into the Arab World after the Camp David accords.

The extent of Soviet arms sales has been noted. Moscow did attempt to extract political concessions in return for the supply. Arms deliveries were cut off in 1980 in protest over the Iraqi invasion. They resumed in 1982, purportedly in exchange for an Iraqi call for cease-fire and complete withdrawal from Iran.²¹ This Iraqi negotiating stance never changed, and

Soviet arms deliveries thereafter continued on a large scale. It appears that Soviet policy was dictated by fear of imminent Iraqi collapse, but it is difficult to assess the extent to which Iraqi policy was affected by the need to maintain their Soviet supply line.²²

American policy was similarly motivated, yet American material support to Baghdad was minimal, and despite many assertions to the contrary, it was not decisive. It is generally accepted that Iraq received substantial intelligence information from the United States. The Washington Post reported that a direct Washington-Baghdad link was installed in August 1986 for communicating that information, and implied that the information played a role in increasingly successful Iraqi attacks on the Iranian economy that had begun that year.²³ For their part, the Iraqis moderated their stridency toward Israel, and came to tacitly accept the validity of the American role in the Gulf. There was no desire in Baghdad to antagonize Washington, as evidenced by the damage control undertaken by the Iraqis after the attack on the USS Stark.

CHAPTER V

OPERATIONAL EFFECTIVENESS

The operational level of war involves the employment of large military forces to achieve strategic goals in a specified theater of war. This analysis will evaluate the operational effectiveness of the Iraqi army in the conduct of the ground war and the effectiveness of the air force and missile forces in the campaign against strategic targets. Also encompassed in this analysis are evaluation of other aspects of military activity which impact on operational effectiveness. These areas include the effects of civil-military relations in operational decision-making, military professionalism, planning, command and control issues, operational level intelligence and operational logistics.

The three phases of the conflict can be defined by the strategic objectives assigned to senior ground force commanders. During the initial phase of the war, the Army was tasked with undertaking offensive operations with the main effort in the south, occupying significant Iranian territory and retaining the initiative. A rapid, decisive strike and retention of the initiative was key to the success of Saddam Hussein's demonstration of strength.

In every aspect of this campaign the army fared poorly. The initial advance was rapid and large areas of Iranian territory was occupied, but this was attributable to almost non-existent Iranian resistance. The army's failure to exploit its success was clearly galling. The limited

strategy adopted by Baghdad may not have required a push into all of Khuzistan's population centers, but the failure to take Dezful, which straddled the line of communication north to Tehran, proved crucial. When the army did set out to take a large city, it did so at Khurramshahr, and in the process provided a textbook example of how not to conduct such an operation. After a long and costly battle the city was taken, but then the Iraqis went after Abadan rather than the crucial routes north. Abadan was the last Iraqi effort at retaining the operational initiative. Eventually the Iranian buildup, continuing relatively unfettered, reversed the tide of war in Khuzistan. By the summer of 1982, the Iraqi Army had been routed from Iran.

The character of the Iraqi effort on the ground changed considerably after Iran carried the war across the border. The Army proved capable of executing the regime's defensive strategy. Except for the loss of the Fao in 1986, and the subsequent failure to retake it, the Iraqi Army did manage to contain the Iranians and to preclude a decisive Iranian victory, precisely what has been required of it. Its rapid enlargement, its steadily widening advantage in technology and logistics, and the 1981-82 effort to construct a line of fortifications in Iraq were significant reasons for this success.²⁴

Consistent, but slow and almost imperceptible improvements in the Iraqi Army continued. Better equipment flowed in, training was enhanced, the elite Republican Guards were enlarged and logistics and intelligence were upgraded. Combined with a corresponding deterioration in Iran's

operational and strategic position, the balance on the ground shifted. The turning point may have come with the successful defense of Basra in early 1987. In March 1988 the Iraqi Army went over to the offense, and in a campaign lasting four months, drove the Iranians from Iraq.²⁵

The story of the operational effectiveness of the Iraqi Army, then, was one of steady improvement throughout the course of the war. Spectacularly unsuccessful during much of its operations in Iran, it was able to contain the Iranians during their repeated offensives during the second phase of the war. When it undertook an operational level offensive in 1988, it proved especially adept. Although this success must be tempered by the knowledge that the Iranians were on the verge of collapse, there should be no doubt that methodical planning and exceptional execution of complex operations characterized the conduct of the Iraqi Army during the campaign.

In its conduct of the air war, the Iraqi Air Force was generally ineffective, although like the ground forces its operational performance did improve over time. Its strategic objective in its first action of the war, the raid on Iranian airfields, was to repeat the successful Israeli preemptive strike in 1967 and destroy the Iranian Air Force on the ground. Instead it found its targets in bunkers and out of reach, and its effort proved particularly ineffective in fulfilling Saddam Hussein's show of Iraqi might. It was a failure attributable to "anachronistic operational thinking and a lack of adequate field intelligence." Poor tactics and a lack of aggression on the part of Iraqi pilots compounded the problem.²⁶

As Saddam Hussein's strategy shifted, the role of the Air Force became that of strategic attack designed, as noted earlier, to damage the Iranian economy and to shake the faith and will of the Iranian people. Toward this end, the military focused on targets designed to disrupt the Iranian oil industry, and to a lesser extent, to sow terror amongst the populations through attacks on urban areas. The bombing of oil facilities perhaps had a secondary objective of creating anxiety in the West over the supply of oil, in order to widen the conflict.²⁷

The strategic bombing met with some success, but certainly not to the extent that Saddam Hussein had envisioned. Despite their increasing destructiveness, these attacks were unable to force a decision on Tehran. The Iranians were required to undertake extreme measures to maintain their oil exports, and this led to a substantial diversion of resources needed elsewhere. Nonetheless, oil exports were never shut off, nor were they reduced for any long period of time. A better target than crude handling facilities, which are more impervious to attack and easier to repair, would have been Iran's refineries. These refineries were crucial to the Iranian war effort, presented a larger target and were much more difficult to repair. Yet no sustained effort was mounted to take them out. Anthony Cordesman argues that the lack of effectiveness of the air campaign was directly attributable to:

" . . . a failure to commit sufficient resources to specific targets with the mass and consistency to be effective."²⁸

The missile war, or War of the Cities as it came to be known, had little impact until 1988. Geography was Iraq's nemesis in its efforts to attack the will of the Iranian people. Tehran, the major population center of the country, and Qom, the great Shi'ite holy city, lay at too great a distance from Iraqi territory to be within the range of standard Soviet-produced SCUD-B missiles. Iraqi long-range air attacks against these urban areas were conducted, but also failed to produce the desired results due to a lack of consistent, sustained effort. When the Iraqis brought their modified SCUDs on line in the spring of 1988, the War of the Cities took on an entirely different character. Over 200 missiles, most aimed at Tehran, rained down on Iran in March and April. In combination with the great fear of chemical weapons, which were not used, and the war exhaustion widely evident in Iran, this missile campaign had a dramatic effect. Over two million people fled Tehran. Particularly notable was that Iraq, which first tested the new missiles in 1987, did not employ them until they had built up a sizable stockpile. The sustained campaign that followed was especially effective. This well planned employment of new technology may have been the most important reason for Iranian collapse.

A lack of professional competence lay at the heart of early Iraqi operational ineffectiveness, and this lack of competence stemmed in turn from the extensive political control exercised by Saddam Hussein over the armed forces. Early on in their rule, the Ba'athists recognized that in their desire for a wider regional role for Iraq, they required a large, modern military establishment. They also realized that such an

establishment threatened their own political fortunes. The result was a preoccupation with political loyalty over professional competence in selecting military leaders. Quoting Edgar O'Ballance regarding Iraqi forces at the beginning of the war:

"The real drawback lay in the senior officers, of the rank of Colonel and above, who had achieved promotions on political grounds . . . They lacked the vision, flair, and imagination necessary to execute their responsibilities adequately, let alone with brilliance."²⁹

The imperatives of defending Iraq after 1982 demanded a new emphasis on competence in the officer corps, as well as a vast enlargement of the armed forces. This resulted in a reduced capability on the part of the regime to control the military through political appointment. The nature of the post-1982 threat did provide some common ground between Saddam Hussein and the competent military commanders that had come to the force. From this common ground appears to have emerged the "tacit contract", noted earlier, one aspect of which was the reward of professional competence. In return, military leaders acceded to the continued existence of the various instruments of political supervision and surveillance of the armed forces.³⁰

Another point of controversy appears to have been the degree of control exercised by Saddam Hussein over military operations. This issue came to a head in 1986, when political authorities ordered the militarily dubious capture of Mehran. The failure of that operation, coming as it did after the loss of Fao, appears to have set in motion an undercurrent of unrest in the high command. The apparent result was a greater freedom of action at the front for military commanders, and a loosening of restrictions

to allow for more independent decision-making.³¹ One author, while confirming this development, argues it may have been meant less for military efficiency than to distance the regime from potential military disasters.³²

Military professionalism seems, therefore, to have followed the same pattern noted earlier, that of gradual improvement. Indeed, in the improvement of military competence may have been the catalyst for the wider improvement in most aspects of the war effort. The generalship and operational art practiced by the Iraqi high command at the end of the war stood in marked contrast to that exercised in the first two years of conflict.

Two key features stand out regarding planning and command and control, both related professional competence. First, the general staff planning effort at the beginning of the war was seriously faulty. The original invasion plan seems to have been based on a 1941 exercise conducted by the British at the Baghdad War College. The Iraqi General Staff seemed incapable of devising an original plan "of any boldness or magnitude".³³ Planning for the final ground offensive in 1988, on the other hand, was exceptional, and did reflect a sophisticated degree of imagination and boldness.³⁴ Nonetheless, command and control remained over-centralized and operations generally suffered from a stifling of initiative.

Intelligence was a problem at all levels for Iraq, and operational level intelligence was no exception. The entire system was dependent on highly politicized human intelligence. Only a very limited capability existed to exploit signals intelligence, and the use of reconnaissance

aircraft and imagery intelligence was also poor. Iraqi intelligence, it has been observed "did as much to provide political and military misinformation as information."³⁵ Information provided by the United States was said to have aided the air campaign, but it appears that after the Iran-Contra disclosures the Iraqis tended to question whether or not the United States was providing intentionally misleading data.

The Iraqis were very effective in conducting operational level logistics. Even during the invasion, when so much else went wrong, the Iraqi Army appeared to conduct their logistics very well. Great stockpiles of all classes of supply were prepared in advance, and during the operations, roads were built to support the provisioning effort. During the defensive phase, the system was even more impressive. Using the British system of supply "push", the Iraqi Army consistently stuck to the principal of oversupply. Road building was extensive, both near the front and into rear areas.³⁶

CHAPTER VI

TACTICAL EFFECTIVENESS

Tactical effectiveness is a measure of the specific combat techniques employed to conduct the combat engagements of the war. Its evaluation involves the evaluation of the actions of soldiers at the "point of the spear"; fighter pilots, the surface-to-air missile and radar crews, and the battalion and company commanders, among others. Tactical activity includes an army's use of armor, infantry, artillery, engineer, attack helicopters and their battlefield integration. It includes the air force tactics employed in strategic bombing, close air support and air defense. This analysis will also evaluate the tactical role of chemical weapons in Iraqi operations.

Ground Operations. The essence of ground operations is what most western armies refer to as combined arms - the synchronization of the efforts of the various branches of the land forces, and close air support, in any ground engagement. During the initial phase of the war, the Iraqi Army was ineffective at conducting classic combined arms operations. Only when they settled into defensive positions and conducted pre-planned operations did they effectively coordinate the efforts of the various branches of the army. When the situation became more fluid that cooperation tended to break down.³⁷

The Iraqis emphasized the role of armored and mechanized units during Phase I, following the lead of their Soviet patrons, but did so poorly. Among their problems were an over-reliance on all tank formations, a chronic lack of infantry, the use of these units in urban combat and a general lack of aggressiveness.³⁸ The performance of armor units was poor throughout much of the defensive war. They were generally employed in unimaginative ways, even as mobile artillery on occasion.³⁹ It wasn't until the final offensive operations of 1988 that effective use was made of the mobility and shock action that are the hallmark of mobile armored warfare.

The early emphasis on armored and mechanized operations had a concomitant negative effect on the role of regular infantry. The battle for Khorramshahr is a good example of where the lack of quality infantry units seriously hindered the efficiency of Iraqi operations. Hundreds of thousands of "People's Army" militia were called up in 1981 and formed into light infantry units. This proved to be an ineffective solution, as the poor performance of these units led to several defeats during the withdrawal from Iran. The effectiveness of both the People's Army and regular Army infantry improved, of course, during the years of the defensive phase. Nonetheless, they continued to rely on static positions, and in general demonstrated a great reluctance to conduct patrols. This allowed Iranian infantry to regularly infiltrate and penetrate Iraqi lines.⁴⁰

Artillery forces principally employed the use of massed fires, both to soften up defenses on the attack, and in counter-personnel and counter-

battery roles in the defense. The effect of these fires on the offense was minimal, especially creeping barrages, and long-duration softening-up. Such attacks generally tipped off the defenders and sacrificed surprise. At the second battle of Fao in 1988, the Iraqis dispensed with their lengthy bombardments and much of their subsequent success was due to the element of surprise.⁴¹ The massed fires were particularly effective in the defense, however, when the targets were massed Iranian infantry. The effectiveness of Iraqi artillery improved throughout the war, and by the final offensive they were using more sophisticated battle management and target acquisition techniques. These new techniques dramatically improved their counter-battery capabilities.⁴²

The Iraqis possessed a significant number of very capable attack helicopters. Nonetheless, the effectiveness of these platforms was diminished by the narrow tactical roles assigned to them. Most often Iraqi helicopters were used as mobile artillery, flying up to the front at firing on advancing Iranian infantry, often in an indirect mode. They were seldom employed in deep strikes or to screen the flanks of attack and counterattack forces. Problems in target acquisition also precluded more effective use.⁴³

Iraqi combat engineers excelled at counter-mobility operations. They constructed a vast network of fortifications, water barriers, fixed barrier defenses, and mine-fields. These fortifications were linked by a vast network of roads, also constructed by engineers. This complex of fortifications, begun while the Iraqi Army was still in Iran, was continuously upgraded and expanded in length and depth. In view of the

human wave infantry tactics employed by the Iranians, this immense, integrated barrier network was probably the single most important factor accounting for the success of the Iraqi Army during the defensive phase of the war.

The Air War. The Iraqis met with mixed success in the use of their ground based air defense systems. They encountered serious problems in the employment of their heavy SAM systems, the SA-2, SA-3 and SA-6, particularly in the areas of electronic maintenance. Israeli assessments of the training and readiness of Iraqi SAM crews placed them well below the Syrians. Short-range systems were more effectively employed, especially the man-portable SA-7 which was used with great success. The vast and rapid proliferation of anti-aircraft guns in the Iraqi inventory (from 1,200 to 4,000 between 1980 and 1985) attests to the Iraqi perception of their utility. In the case of short-range missiles and gun systems, success must be viewed in terms of their clear, demonstrated capability to degrade the effectiveness of close air support, not by the relative small number of kills.⁴⁴

The only serious Iraqi attempt at offensive counter-air was the initial raid on Iranian airfields, which of course fell far short of their goals. When many aircraft were found to be in bunkers, many of the Iraqi sorties were diverted to disabling runways. This effort failed due to a lack of precision, and a lack of follow-up raids. More critically, in a number of instances Iraqi pilots entirely ignored aircraft parked in the open in a futile effort to disable runways.⁴⁵

Iraqi counter-air was particularly inept. Iranian pilots consistently maintained the upper hand in air-to-air combat, although attrition and lack of spare parts took its toll on this Iranian advantage. Even late in the war, despite reduced sortie rates, Iranian planes were generally able to get to their targets unmolested. One reason for this was that the priority for Iraqi air defense went to their ground based systems. Lacking an effective identification-friend-or-foe system, the Iraqis turned large areas into AAA fire zones, where their aircraft did not stray.⁴⁶ It is also likely this tactical failing had a political reason, with the regime seeking to husband resources and preclude high losses, especially in an area of such high political visibility as air combat.

Close air support (CAS) by fixed wing aircraft was conducted only in a limited fashion and was generally ineffective. Joint training with ground forces was lacking, and most Iraqi aircraft, including its French Mirages, did not have advanced attack avionics. One report indicates the Iraqi Air Force placed little doctrinal emphasis on CAS, based on its view of the high losses suffered by both sides in the 1973 Yom Kippur/Ramadan War.⁴⁷ Furthermore, the reliance on massed artillery fires also reduced the need for high-risk CAS missions.

The Iraqi strategic air campaign had three components: bombing against economic targets on land, attacks on oil facilities and tanking operations in the Gulf, and air and missile attacks against urban areas. The Iraqis suffered from a number of tactical deficiencies in prosecution of this effort, failings which greatly constrained its effectiveness.

In the bombing campaign aimed at economic targets, Iraqi pilots gained international notoriety for their conservatism. Nonetheless, the Iraqi Air Force eventually took its toll on the Iranian economy. The real question is why did their effort, conducted against little opposition in the later years of the war, take so long to have a strategic effect? Problems of operational effectiveness were addressed earlier. The evidence also points to several tactical factors:

- o Too few aircraft were used in each attack to achieve the desired level of destruction.
- o The Iraqis suffered from a problem of unexploded ordnance, often due to ground crew mistakes in fuzing and priming.
- o A reluctance to revisit key targets.⁴⁸

Attacks against oil facilities in the Gulf were aimed predominantly at Kharg Island and shipping carrying Iranian oil. The attacks at Kharg suffered from many of the problems noted above, and from a reluctance to press the attack due to a fear of aircraft losses. Iraqi maritime air operations were generally ineffective until it began operations with the Exocet. Nonetheless, the effectiveness was still constrained by the lack of secure base near the Gulf and an inadequate long-range target acquisition capability to detect high value targets with precision.⁴⁹

Air raids against Iranian urban centers, conducted in retaliation for missile attacks against Baghdad, were numerous. Ordnance included cluster bombs and possibly fuel-air explosives. The Iraqis undertook high-altitude bombing using TU-22s, but these attacks were never pressed.⁵⁰ One

of the major problems was the long distance to Tehran, which required reduced weapons payloads for Iraqi aircraft.

The Iraqi missile campaign, despite its great psychological impact and the fact that it proved operationally successful, nonetheless demonstrated no great tactical prowess on the part of the Iraqis. The missiles and launch vehicles were never under threat of attack; the Iraqis had only to literally load, aim and fire. If anything, the missile campaign pointed how successful the bombing campaign might have been if it were more vigorously prosecuted operationally and tactically.

Chemical Weapons. The Iraqi Chemical Corps generally employed two types of chemical weapons, a persistent mustard agent beginning in 1982, and a non persistent nerve gas, first used in the unsuccessful defence of the Majnoon Islands in early 1984. The more persistent mustard agent, although not terribly lethal, did consume a great deal more Iranian medical services and support than did nerve gas.⁵¹ Nonetheless, being persistent, it complicated Iraqi freedom of maneuver. As nerve gas became more available, it became the Iraqi chemical weapon of choice and the mustard agent was relegated to attacks on Iranian rear areas.

The Iraqis generally employed nerve gas on massed Iranian troop formations, which proved especially effective in defensive operations. The defensive battles of Fao in 1986 and Basra in 1987 were battles where chemical agents clearly had an impact. Additionally, the Iraqi Chemical

Corps became adept not only at employment, but in chemical defense operations as well.

One interesting point is that Iraqi use of chemical agents were limited to last resort situations where conventional weapons had failed. This Iraqi "restraint" was clearly tied to western reaction and the need to sustain western sources of supply.⁵² In sum, Iraqi use of chemical weapons was reflected by effective battlefield use of the weapons combined with a clear understanding of the political limitations imposed on their use.

CHAPTER VII

CONCLUSIONS

The political effectiveness of the Iraqi armed forces during the war was exceptional. The regime allocated resources to the military effort that was unprecedented in the post-World War II era, and it sustained that high level of support through the duration of the war. The military faced little competition for budget shares and essentially had full access to whatever armaments could be bought on the global arms market. Pragmatic political maneuvering by Saddam Hussein's regime guaranteed the availability of sophisticated weaponry from a variety of sources. Manpower proved no problem, as conscription was never widely resisted, and the regime allowed virtually unlimited foreign workers to cover the labor shortage caused this undeclared military mobilization. This unlimited support can be directly attributed to the fact that the war became, after 1982, one for both the survival of Iraq and the survival of the Ba'athist regime.

Saddam Hussein's initial strategy of war as a demonstration of Iraqi might proved faulty due to the gravely inaccurate assumption on which it was based. It underestimated Iranian resolve and it overestimated both Iranian political weakness and Iraqi military strength. The defensive strategy adopted during the second phase of the war proved decisive only over the long-term, as Iraq lacked the military means to force an early end to the war. In the end, a number of factors coalesced, resulting in the conclusive success of that strategy. Another key point for consideration

in this evaluation of Iraqi strategy is that the first objective of Saddam Hussein's inner circle was the survival of the regime, a fact which permeated much of the War's strategic decision-making.

The Iraqi Army and Air Force proved to be poor operational tools during the first phase of the war. Even in the defensive phase, the Air Force failed to achieve its strategic objective, owing to a reluctance to consistently press the attack. Only when they were able to reach Tehran with modified SCUD missiles did the Iraqi Armed Forces satisfy their objective of putting distance between the Iranian regime and its people. The Iraqi ground forces were able to achieve their strategic objective of containing the Iranian invasion, but did so with little vision or flair and with great loss of life. Much of the Iraqi problem was the lack of professional competence amongst the senior military leadership, since competence had always taken a back seat to political loyalty in advancement. Another problem was political interference in military affairs. The demands of defense of the country and the regime led to new policies on the part of Saddam Hussein which in turn led to real improvement in the performance of higher-echelon commanders.

At the operational level, it was the surface-to-surface missile campaign that proved decisive for Iraq. The 1988 War of the Cities achieved in sixty days what the Air Force had been unable to do in 5 1/2 years - it put great doubt in the Iranian populace that the Tehran regime could protect them. The fact that the Iraqis built up a stockpile of these missiles, and

then employed them in a barrage, attests to the well-thought out planning involved in this campaign.

In general, the tactical effectiveness of the armed forces improved slowly but consistently during the course of the war, especially in the Army. The Iraqis became especially adept at all aspects of the defense. Most impressive were their combat engineers, and in the latter stages of the war, their artillery. Generally the Army's use of armor and combat helicopters was ineffective, and until the final campaign, commanders showed little capacity to integrate and synchronize the various ground combat arms. Nonetheless, in that final campaign the Iraqi Army was impressive in virtually all aspects of combat operations.

The Air Force, despite improvements, turned in a sub-par performance throughout. It suffered from a variety of tactical problems, to include a lack of pilot aggressiveness and poor ground crew training. The evaluations of air defense artillery is mixed. The Iraqis proved unable to effectively employ their heavy SAM systems, due to a host of technical difficulties. Gun systems and short range missiles became the weapons of choice, and though they brought down few Iranian planes, Iranian CAS was severely degraded when it flew.

The general pattern established was one of steady improvement in all areas of evaluation. Certainly the Iraqi Armed Forces and the national military effort were far more effective in 1988 than when the war began. It can be argued that the Iraqi military, in the end, emerged victorious because it defeated an enemy in ruins. Nonetheless, in 1988 this was a

well-equipped, battle - hardened force that had taken the long journey from ineptitude to respectability.

..

NOTES

1. Allan R. Millet, Williamson Murray, and Kenneth H. Watman, "The Effectiveness of Military Organizations, Allan R. Millet and Williamson Murray, ed. Military Effectiveness, Volume I, The First World War (Boston: Allen and Unwin, 1988) pp. 1-27.
2. Edgar O'Ballance, The Gulf War (London: Brassey's Defense Publishers, 1988), p. 85.
3. Michael Ross, "Experts Say Iran May Win War by Nibbling at Iraq," The Los Angeles Times, 20 March 1987, p. 1:1.
4. Millet, Murray and Watman, p.4.
5. Shahram Chubin and Charles Tripp, Iran and Iraq at War (Boulder, CO.: Westview Press, 1988), p.117.
6. Stockholm International Peace Research Institute, SIPRI Yearbook 1989: World Armaments and Disarmament (Oxford, U.K.: Oxford University Press, 1989), pp. 184-188.
7. Ibid. p. 211.
8. Kenneth R. Timmerman, "Arms Sales Make the War Go Around," Defense Electronics, October 1988, p. 120.
9. Shahran Chubin, "Hedging in the Gulf: The Soviets Arm Both Sides," International Defense Review, Vol. 20, #6, 1987, p.732.
10. Chubin and Tripp, Iran and Iraq at War p. 93.
11. Anthony H. Cordesman and Abraham R. Wagner, The Lessons of Modern War: Volume II, The Iran - Iraq War, (Boulder, CO.: Westview Press, 1990), p.54.
12. Marion Faronk-Sluglett, Peter Sluglett, and Joe Stork, "Not Quite Armageddon: Impact of the War on Iraq" MERIP Reports, July-September 1984, p.27.
13. Millet, Murray and Watman, p.7.
14. Philip Robbins, "Iraq in the Gulf War: Objectives, Strategies and Problems, "Hans W. Maull and Otto Pick, ed., The Gulf War, (New York: St. Martin's Press, 1989) pp. 47-48.

15. Christine Mass Helms, Iraq: Eastern Flank of the Arab World, (Washington, DC: The Bookings Institution, 1984), p. 165-166.
16. Chubin and Tripp, Iran and Iraq at War, p.54.
17. Ibid. p. 61.
18. Philip Robbins, "Iraq in the Gulf War: Objectives, Strategies and Problems, "Hans W. Maull and Otto Pick, ed., The Gulf War, (New York: St. Martin's Press, 1989) p.52.
19. Shahram Chubin and Charles Tripp, Iran and Iraq: War, Society and Politics, 1980-1986, Program for Strategic and International Security Studies Occasional Papers, Number 1/86, p.24.
20. Majid Khadduri, The Gulf War: The Origins and Implications of the Iraq-Iran Conflict, (New York: Oxford University Press, 1988), p.127.
21. Timmerman, p.22.
22. Amazia Baram, "Iraq: Between East and West," Efraim Karsh, ed., The Iran-Iraq War, Impact and Implications, (New York: St. Martin's Press, 1989), p.84.
23. Bob Woodward, "CIA Aiding Iraq in Gulf War," The Washington Post, December 15, 1986, p. A:1.
24. Efraim Karsh, The Iran-Iraq War: A Military Analysis, Adelphi Papers, no. 220 (London: International Institute for Strategic Studies, 1987), p. 25.
25. Stephen C. Pelletiere, Douglas V. Johnson II and Lief R. Rosenberger Iraqi Power and U.S. Security in the Middle East, (Carlisle Barrcks, PA: Strategic Studies Institute, 1990) pp. 25-40. (There have been several writings on this campaign, dubbed "Tawakalma ala Allah" by the Iraqis. For the best analysis, see the above).
26. Karsh, p.36.
27. Chubin and Tripp, Iran and Iraq at War, p.66.
28. Cordesman and Wagner, p.44.
29. O'Ballance, p.185.
30. Chubin and Tripp, Iran and Iraq at War, p.117.
31. Ibid. p. 119.

32. O'Ballance, p.185.
33. Ibid. p.48.
34. Pelletiere, Johnson and Rosenberger, p.31.
35. Cordesman and Wagner, p.44.
36. Ibid. p.452.
37. Ibid. p. 425.
38. O'Ballance, p.209.
39. Anthony R. Tucker, "Armoured Warfare in the Gulf." Armed Forces, May 1988, p.225.
40. Cordesman and Wagner, pp. 426-427.
41. Pelletiere, Johnson and Rosenberger, p.29.
42. Cordesman and Wagner, p.441.
43. Ibid. p.445.
44. Ibid. p. 459-462.
45. O'Ballance, pp. 42-43.
46. Ronald E. Berquist, The Role of Airpower in the Iran-Iraq War, (Maxwell AFB, AL: Air University Press, 1988), p. 52.
47. Ibid. p. 60.
48. Ibid. pp. 46-47.
49. Cordesman and Wagner, p.540.
50. Ibid. p. 540.
51. Anthony H. Cordesman, "Creating Weapons of Mass Destruction," Armed Forces Journal International, February 1989, p. 58.
52. Andrew Terrill, Jr. "Chemical Weapons in the Gulf War," Strategic Review, Spring 1986, p. 54.

BIBLIOGRAPHY

- Axelgard, Frederick W. "Iraq and the War with Iran." Current History, February 1987, pp. 57-60.
- Baram, Amazia, "Iraq: Between East and West," Efraim Karsh, ed., The Iran-Iraq War, Impact and Implications, (New York: St. Martin's Press, 1989), p.84.
- Baranauskas, Tom. "Air Power in the Iran-Iraq War." Asian Defense Journal, March, 1987, pp. 52-61.
- Berquist, Ronald E., The Role of Airpower in the Iran-Iraq War. (Maxwell AFB, AL: Air University Press, 1988), p. 52.
- Burgess, William H. "Special Operations in the Iran-Iraq War." Special Warfare, Winter 1989. p. 16-29.
- Chubin, Shahran, "Hedging in the Gulf: The Soviets Arm Both Sides," International Defense Review, Vol. 20, #6, 1987, p.731-735.
- Chubin, Shahram and Tripp, Charles, Iran and Iraq at War (Boulder, CO.: Westview Press, 1988).
- Chubin, Shahram and Tripp, Charles, Iran and Iraq: War, Society and Politics, 1980-1986, Program for Strategic and International Security Studies Occasional Papers, Number 1/86.
- Cordesman, Anthony H., "Creating Weapons of Mass Destruction," Armed Forces Journal International, February 1989, pp 54-57.
- Cordesman, Anthony H. and Wagner, Abraham R., The Lessons of Modern War: Volume II, The Iran - Iraq War, (Boulder, CO.: Westview Press, 1990).
- Faronk-Sluglett, Marion, et al. "Not Quite Armageddon: Impact of the War on Iraq" MERIP Reports, July-September 1984, pp.22-30.
- Gaunt, Robert, "War in the Shallow Seas." Defense and Foreign Affairs. October 1985, pp. 28-31.
- Grummon Stephen R. The Iran-Iraq War: Islam Embattled: Washington, DC: Praeger Publishers, 1982.

- Helms, Christine Mass, Iraq: Eastern Flank of the Arab World, (Washington, DC: The Bookings Institution, 1984)
- Hiro, Dilip, "Chronicle of the Gulf War." MERIP Reports, July-September 1984, pp. 3-14.
- Karsh, Efraim, The Iran-Iraq War: A Military Analysis, Adelphi Papers, no. 220 (London: International Institute for Strategic Studies, 1987).
- Karsh, Efraim, The Iran-Iraq War: Impact and Implications. New York: St. Martin's Press, 1989.
- Khadduri, Majid, The Gulf War: The Origins and Implications of the Iraq-Iran Conflict, (New York: Oxford University Press, 1988).
- King, Ralph, The Iran-Iraq War, Adelphi Papers, no. 219, London: International Institute for Strategic Studies, 1987.
- Mauil, Hans, W. and Pick, Otto, ed. The Gulf War. New York: St. Martin's Press, 1989.
- Millet, Allan R., et al. Military Effectiveness: Volume I, The First World War. Boston: Allen and Unwin, 1988.
- Myroie, Laurie, "The Superpower and the Gulf War" American-Arab Affairs. Summer, 1987. pp. 15-26.
- Naff, Thomas, ed. Gulf Security and the Iran-Iraq War. Washington, DC: National Defense University Press, 1985.
- O'Ballance, Edgar, The Gulf War (London: Brassey's Defense Publishers, 1988)
- Pelletiere, Stephen C., Johnson, Douglas V., II and Rosenberger, Lief R., Iraqi Power and U.S. Security in the Middle East, (Carlisle Barracks, PA: Strategic Studies Institute, 1990)
- Robbins, Philip, "Iraq in the Gulf War: Objectives, Strategies and Problems," Hans W. Mauil and Otto Pick, ed., The Gulf War, (New York: St. Martin's Press, 1989) pp. 47-48.
- Ross, Michael, "Experts Say Iran May Win War by Nibbling at Iraq," The Los Angeles Times, 20 March 1987, p. 1:1.

- Shirin, Taher and Shaheen, Ayabi, ed. the Iran-Iraq War: New Weapons, Old Conflicts. New York: Praeger Publishers, 1983.
- Stockholm International Peace Research Institute, SIPRI Yearbook 1989: World Armaments and Disarmament (Oxford, U.K.: Oxford University Press, 1989)
- Terrill, Andrew, Jr., "Chemical Weapons in the Gulf War," Strategic Review, Spring 1986, pp 51-58.
- Timmerman, Kenneth R., "Arms Sales Make the War Go Around," Defense Electronics, October 1988, p. 120.
- Tucker, Anthony R., "Armoured Warfare in the Gulf." Armed Forces, May 1988, pp 223-226.
- Tucker Anthony R., "Armies of the Gulf War" Armed Forces. July 1987, pp. 319-323.
- Urost, Milton. "Iraq at War". Foreign Affairs. Winter 86/87, pp. 349-365.
- Woodward, Bob, "CIA Aiding Iraq in Gulf War," The Washington Post, December 15, 1986, p. A:1.