Iraq Country Handbook

1. This handbook provides basic reference information on Iraq, including its geography, history, government, military forces, and communications and transportation networks. This information is intended to familiarize military personnel with local customs and area knowledge to assist them during their assignment to Iraq.

2. This product is published under the auspices of the U.S. Department of Defense Intelligence Production Program (DoDIPP) with the Marine Corps Intelligence Activity designated as the community coordinator for the Country Handbook Program. This product reflects the coordinated U.S. Defense Intelligence Community position on Iraq.

3. Dissemination and use of this publication is restricted to official military and government personnel from the United States of America, United Kingdom, Canada, Australia, NATO member countries, and other countries as required and designated for support of coalition operations.

4. The photos and text reproduced herein have been extracted solely for research, comment, and information reporting, and are intended for fair use by designated personnel in their official duties, including local reproduction for training. Further dissemination of copyrighted material contained in this document, to include excerpts and graphics, is strictly prohibited under Title 17, U.S. Code.

Contents

KEY FACTS 1

U.S. MISSION 2
- U.S. Embassy 2
- Travel Advisories 2
- Passport and Visa Requirements 3
- Customs Restrictions 4

GEOGRAPHY AND CLIMATE 5
- Geography 5
  - Statistics 5
  - Boundaries 5
  - Topography 6
- Climate 8
- Environment 11

TRANSPORTATION AND COMMUNICATION 11
- Transportation 11
  - Roads 11
  - Railroads 12
  - Air 13
  - Maritime 13
- Communications 13
  - Radio and Television 13
  - Telephone and Telegraph 14
  - Newspapers and Periodicals 14
  - Satellites 15

CULTURE 15
Society 15
People 15
Education 18
Religion. 18
Customs and Courtesies. 18
Greetings. 19
Talking Distance 19
Gestures 19
Hospitality. 20
Dress Standards. 20
Relationships 21
Family and Social Interaction. 21
Friendship 21
Professional Relarionships 22
Other Cultural Considerations. 23
MEDICAL ASSESSMENT 24
Disease Risks to Deployed Personnel 25
Foodborne or Waterborne Diseases 25
Vector-borne Diseases. 25
Sexually Transmitted Diseases 25
Respiratory Diseases. 26
Water Contact Diseases. 26
Animal Contact Diseases 26
Key Medical Facilities. 26
HISTORY 28
Chronology 41
GOVERNMENT AND POLITICS 46
Government 46
National Level. 46
Key Government Officials 49
Local Level 50

Politics 50
Elections 50
Suffrage 51
Parties and Pressure Groups 51
Foreign Relations 54
United States 54
Bordering Countries 55
Other Countries 59
ECONOMY 59
Statistics 62
Services 63
ARMED FORCES 63
Organization 63
National Policy 65
Doctrine 66
Strategy 67
National Organization 68
Future 69
Key Defense Personnel 70
Force Disposition 70
Uniforms and Insignia 70
Army 74
Organization 74
Personnel 74
Equipment 76
Ground Operational Level of War 77
The Offense 80
The Defense 83
Tactics: Division and Below 85
Engineers 142
Combat Service Support 153
Special Operations Forces 156

Unconventional Warfare and Tactics 157
Other Considerations 159
Air Defense 166
Concepts and Principles 166
Mission 166
Organization of Strategic Air Defense 167
SA-6 Operations 170
Corps Air Defense 170
Division Air Defense 171
Air Defense Equipment 172
SA-7 Site Configuration 174
Helicopter Detection By Maneuver Divisions 175
Air Defense Assessment 175
Air Force 175
Organization 175
Personnel 176
Equipment 176
Navy 179

Appendices

A. Equipment Recognition A-1
B. Organizational Charts B-1
C. International Time Zones C-1
D. Conversion Charts D-1
E. Holidays E-1
F. Language F-1
G. International Road Signs G-1
H. Arabic Road Signs H-1
I. Deployed Personnel’s Guide to Health Maintenance I-1
J. Individual Protective Measures J-1
K. Dangerous Animals and Plants K-1
L. International Telephone Codes L-1
M. Desert Operations M-1

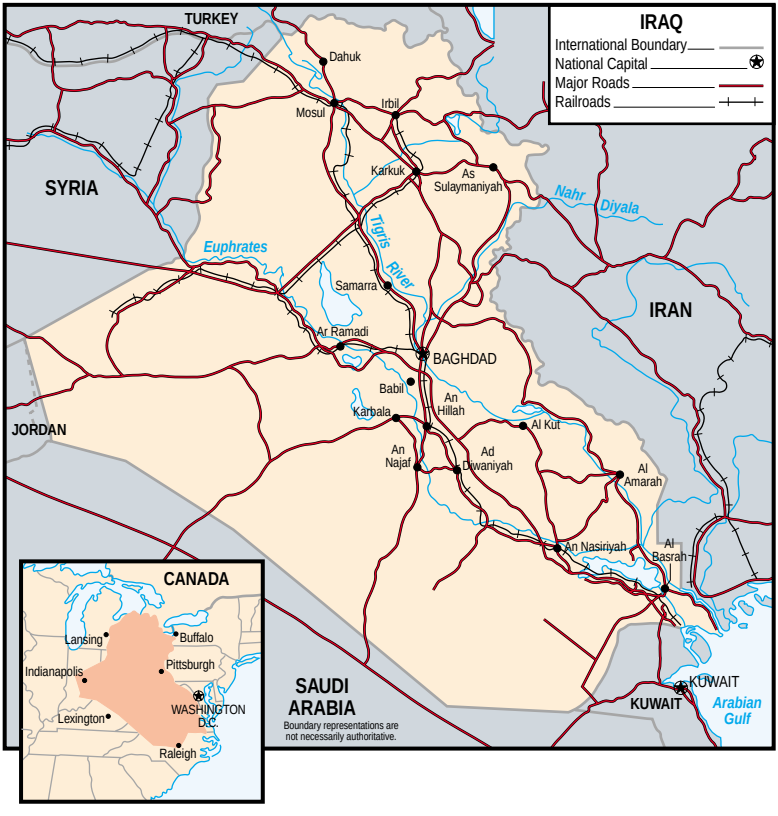
List of Illustrations

Country Map ix
National Flag 1
Topography and Drainage 6
Land Use 7
Baghdad and Al Basrah Weather 9
Mosul and As Sulaymaniyah Weather 10
Transportation Network 12
Population Density 16
Dissident Area 17
Oilfields 31
Provinces 51
Major Industries 61
Military Installations 71
Rank Insignia 72
Regular Army Units 75
Republican Guard Units 76
Probable Armor-Heavy Battle Group 86
Probable Mechanized Infantry-Heavy Battle Group 86
Combat Teams in an Armor-Heavy Battle Group 87
Armor-Heavy Battle Group in March Formation 89
Armor-Heavy Battle Group in Concentration Area 90
Armor-Heavy Combat Team in Concentration Area 91
Armor-Heavy Battle Group in Harbor 92
Armor-Heavy Combat Team in Harbor, Box Formation 93
Armor-Heavy Battle Group Conducting a Deliberate
Attack Employing Fire and Maneuver 96
Armor-Heavy Battle Group Conducting a Deliberate
Attack Employing a Frontal Attack 97

Armor-Heavy Battle Group Employed as Advance Force of Brigade 99
Various Maneuvers 102
Mechanized-Heavy Battle Group Deployment for Rapid Attack from the Right Wing 106
Mechanized Division Withdrawal 118
Infantry Division Deliberate Defense 120
Infantry Brigade Group Deliberate Defense 121
Infantry Battalion Group Defense 123
Infantry Company in Defense 126
Infantry Company in Linear Defense 127
Infantry Platoon Deliberate Defense 129
Infantry Division Artillery 131
Infantry Brigade Fire Support 132
Forward Observer and Fire Control Net 135
Battery Emplacement Techniques 136
Company in "Lazy W" 137
Air Defense Sectors 168
SA-7 Site Configuration 174

Tables

Battle Group/Phases of the Meeting Battle 94
Direct Fire Weapons in the Defense 124
Maximum Range of Mortars 132
Iraqi Targeting Priority (Offense) 139
Iraqi Targeting Priority (Defense) 142
Iraqi Landmine Holdings 151
Landmines Emplaced by Iraqi Forces during Desert Storm 152


IRAQ
International Boundary
National Capital
Major Roads
Railroads
TURKEY
SYRIA
IRAN
JORDAN
SAUDI ARABIA
Boundary representations are not necessarily authoritative.
KUWAIT
KUWAIT
Arabian Gulf
Dahuk
Mosul
Irbil
Karkuk
As Sulaymaniyah
Nahr Diyala
Tigris River
Euphrates
Samarra
Ar Ramadi
BAGHDAD
Babil
Karbala
An Hillah
Al Kut
An Najaf
Ad Diwaniyah
Al Amarah
An Nasiriyah
Al Basrah
CANADA
Lansing
Buffalo
Indianapolis
Pittsburgh
WASHINGTON D.C.
Lexington
Raleigh

KEY FACTS

Official Name.
Conventional short form: Iraq
Conventional long form: Republic of Iraq
Local long form: Al Jumhuriyah al Iraqiyah
Local short form: Al Iraq

Flag. Three equal, horizontal bands of red (top), white, and black with three green five-pointed stars in a horizontal line centered in the white band. The phrase "Allah Akbar" (God is Great) in green Arabic script was added in January 1991 during the 1990-91 Gulf War.

Chief of State. President Saddam Hussein, also, chairman of the Revolutionary Command Council and head of the Ba'ath Party.

Capital: Baghdad

Time Zone. +3 hrs UTC (formerly GMT); +8 hrs EST

Population. 23,331,985

Language. Arabic (81 percent of population).
Also Kurdish, Assyrian, and Armenian.

National Flag

Currency. 1 Iraqi dinar (ID) = 1,000 fils

Exchange Rates. *Fixed official rate:* 3.2169 Iraqi dinars (ID) per US$1 (since 1982); *Semi-official rate:* 1,000 Iraqi dinars per US$1

U.S. MISSION

U.S. Embassy

There is no U.S. Embassy in Iraq. The U.S. government cannot provide consular protective services to U.S. citizens who are in Iraq. U.S. government interests are represented by the government of Poland, which, as a protecting power, can provide only limited emergency services to U.S. citizens. Inquiries on the present local situation, such as traffic safety, road conditions or currency regulations, should be made to the U.S. Interests Section of the Embassy of Poland. The Polish Embassy is opposite the Foreign Ministry Club (Masbah Quarter); PO Box 2447 Alwiyah, Baghdad, Iraq. The telephone number is (964)(1) 719-6138, 719-6139, 719-3791, or 718-1840; Telex 212287.

Travel Advisories

On 20 July 2001, the U.S. Department of State warned all U.S. citizens against travel to Iraq. Conditions throughout the country remain unsettled and dangerous, and U.S. passports are not valid for travel to, in, or through Iraq unless they are validated by the Department of State. The United States has no diplomatic relations with Iraq. There is no U.S. Embassy in Iraq, and the United States government cannot provide normal consular protective services there to U.S. citizens. U.S. government interests in Iraq are represented by the government of Poland, which, as a protecting power, can provide only limited emergency services to U.S. citizens. In addition, there is a U.S. trade embargo which severely restricts financial and economic activities with Iraq, including travel-related transactions.

Passport and Visa Requirements

Passports and visas are required. On 8 February 1991, U.S. passports ceased to be valid for travel to, in, or through Iraq; a special validation is required. Without a passport validation, use of a U.S. passport for travel to, in, or through Iraq constitutes a federal violation and may be punishable by a fine and/or imprisonment. An exemption to the above restriction is granted to Americans residing in Iraq as of 8 February 1991 who continue to reside there and to American professional reporters or journalists on assignment there. A list of those eligible for a validation follows:

- **Professional Reporters.** Includes full-time members of the reporting or writing staff of a newspaper, magazine, or broadcasting network whose purpose for travel is to gather information about Iraq for dissemination to the general public.
- **Red Cross.** Applicant establishes that he or she is a representative of the American Red Cross or International Red Cross traveling pursuant to an officially sponsored Red Cross mission.
- **Humanitarian Considerations.** Applicant must establish that his or her trip is justified by compelling humanitarian considerations or for family unification. At this time, “compelling humanitarian considerations” include situations where the applicant can document that an immediate family member is critically ill in Iraq. Documentation concerning family illness must include the name and address of the relative, and be from that relative's physician attesting to the nature and gravity of the illness. “Family unification” situations may include cases in which spouses or minor children are residing in Iraq and dependent on an Iraqi national spouse or parent for their support.
- **National Interest.** The applicant's request is otherwise found to be in the national interest.

Passport validation requests for Iraq should be forwarded in writing to the following address:

Deputy Assistant Secretary for Passport Services
U.S. Department of State
2401 E St., NW, 9th Floor
Washington, D.C. 20522-0907
Attention: Office of Passport Policy and Advisory Services
Telephone: (202) 663-2662
Fax: (202) 663-2654

The request must be accompanied by supporting documentation according to the category under which validation is sought.

In all requests for passport validation for travel to Iraq, the name, date, and place of birth for all concerned persons must be given, as well as the U.S. passport numbers. Documentation as outlined above should accompany all requests. Additional information may be obtained by writing to the above address or by calling the Office of Passport Policy and Advisory Services at (202) 663-2662.

Customs Restrictions

In addition to the U.S. passport restrictions, all U.S. persons are subject to the Iraq Sanctions Regulations administered by the U.S. Department of the Treasury, Office of Foreign Assets Control (OFAC). OFAC maintains a 24-hour fax service (202) 622-0077 that offers current information about the embargo on Iraq.

In August 1990, former President Bush imposed economic sanctions against Iraq, including a complete trade embargo. OFAC administers the regulations related to these sanctions, which include restrictions on all financial transactions related to travel to Iraq. These regulations prohibit all travel-related transactions, except as specifically licensed. The only exceptions to this licensing requirement are for persons engaged in journalism or on official U.S. government or UN business.

Sanctions regulations prohibit all U.S. persons from engaging in unauthorized, travel-related transactions to or within Iraq. Please note, however, that transactions relating to travel for journalistic activity by those employed by a news-gathering organization are exempt from the prohibition. U.S. persons may engage in travel-related transactions to visit immediate family members in Iraq, provided that the U.S. persons seeking travel obtain a license from OFAC. Questions concerning these restrictions should be addressed directly to:

U.S. Department of the Treasury
Office of Foreign Assets Control
Licensing Division
Washington, DC 20220
Telephone: (202) 622-2480;
Fax: (202) 622-1657

GEOGRAPHY AND CLIMATE

Geography

Statistics

Land Area. 435,292 square kilometers (168,023 square miles); slightly larger than California

Coastline. 56 kilometers (36 miles)

Largest Cities (by population).

Baghdad	7,346,000	Irbil	479,000
Al Basrah	1,851,000	An Najaf	423,000
Mosul	1,200,000	As Sulaymaniyah	394,000
Kirkuk	535,000	Al Hillah	279,000

Boundaries

Iraq is bordered to the north by Turkey (331 kilometers), to the east by Iran (1,458 kilometers), the south by Kuwait (240 kilometers) and the

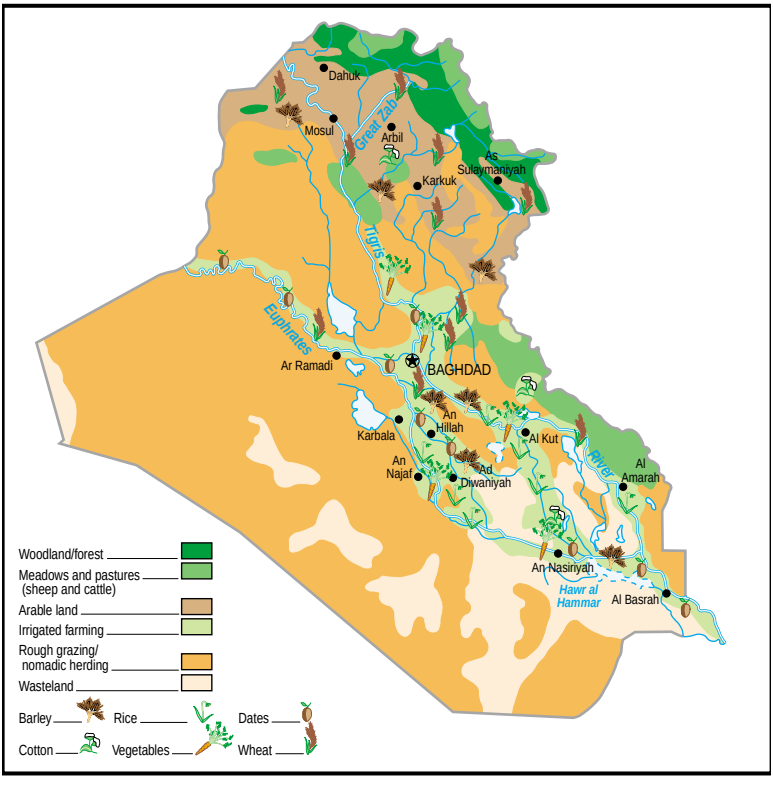
Arabian Gulf (58 kilometers), and to the west by Saudi Arabia (686 kilometers), Jordan (134 kilometers), and Syria (605 kilometers).

Topography

The delta lowland region of the Tigris and Euphrates river basin extends southeasterly from north of Baghdad, past Al Basrah, to the Arabian Gulf. The area is flat and encompasses 19,425 square kilometers (7,500 square miles) of marshland. Lakes are also present in southeastern Iraq.

Topography and Drainage

The southwest desert region is an extension of the Arabian Peninsula. It comprises half of Iraq's total area but contains only 1 percent of the population. This arid steppe region continues into Syria, Jordan, and Saudi Arabia. Sparsely inhabited by nomads, the region consists of a wide, stony plain interspersed with a few sandy stretches. A wide pattern of wadis runs from the border to the Euphrates. Some wadis are more than 400 kilometers-long; they flood during the winter rains.



Land Use

The northeastern region borders Turkey to the north and elevation increases toward Iran. The region's transitions from rolling plateaus nearest Turkey to irregular hills and then to mountain ridges (the Zagros Mountains), where summits average 2,440 meters (8,000 feet) elevation. Except for a few valleys, the mountain area is used only for livestock grazing in the foothills and steppes. The soil and rainfall, however, make cultivation possible. The oilfields near Mosul and Kirkuk are in the northeast region.

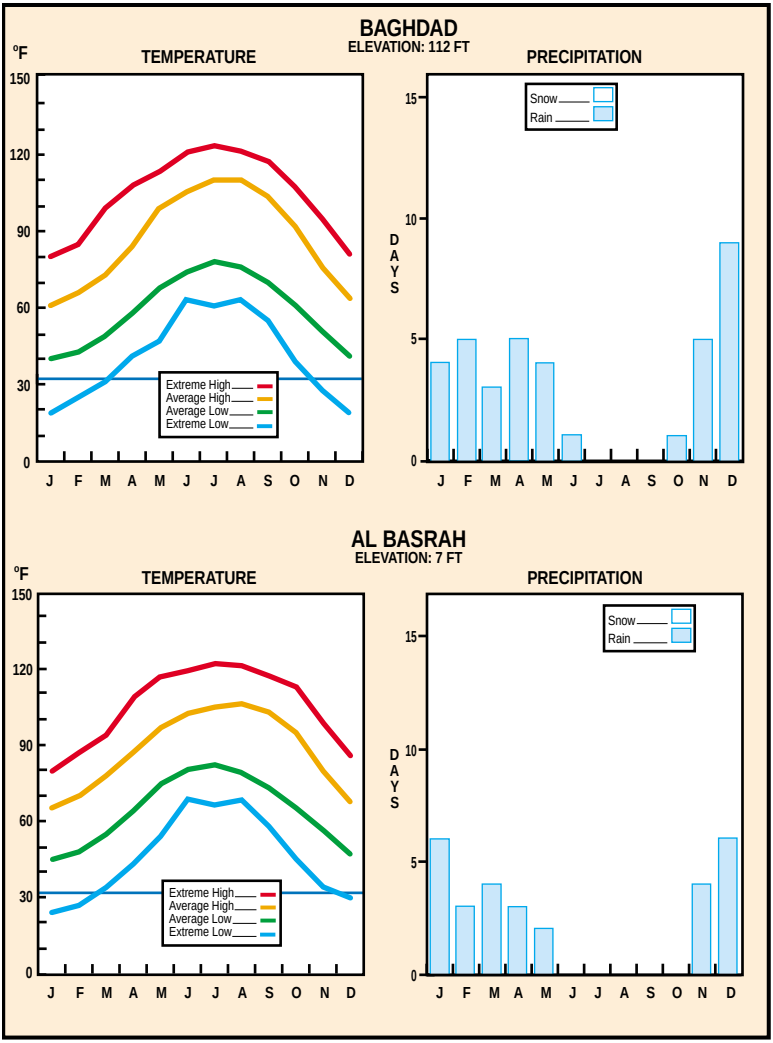
An uplands region between the Tigris and the Euphrates is known as Al Jazirah. It extends westward into Syria, between the two rivers, and into Turkey. Water in the area flows in deep valleys, and irrigation is more difficult than in the lower plain. Much of this zone may be classified as desert.

Climate

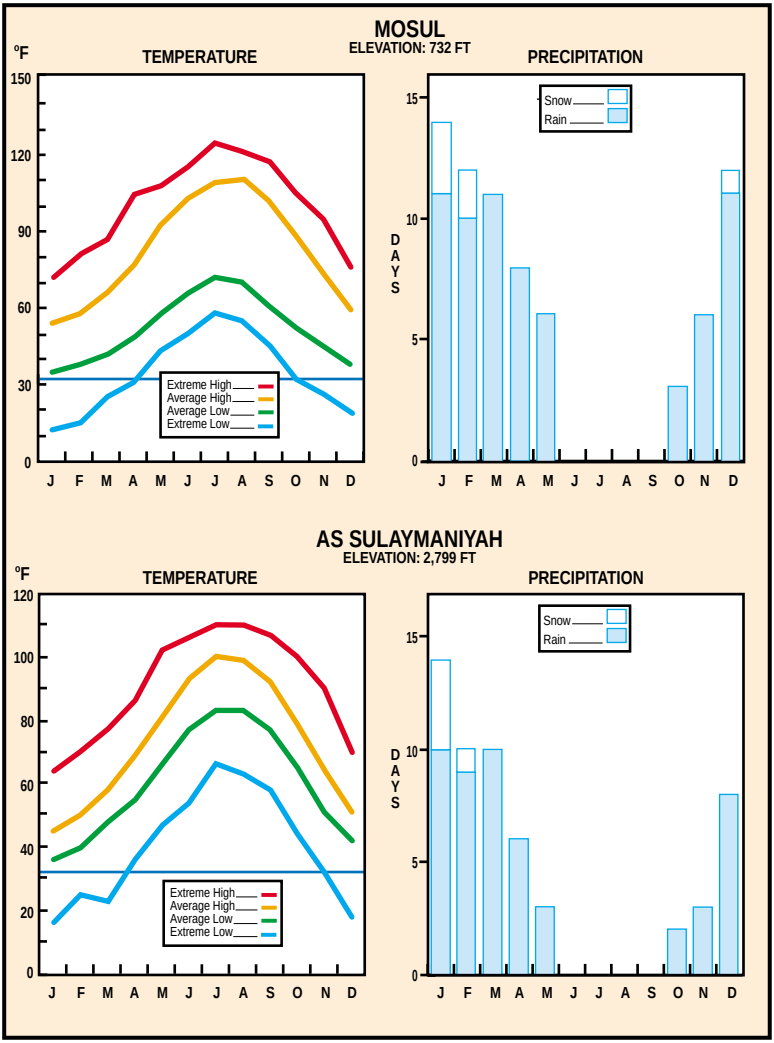
The extremely hot, dry, clear summer months last from May through October, and produce maximum daytime temperatures that reach 40°C (100°F), usually varying between 31°C (88°F) and 34°C (93°F). Temperatures are cooler in the northeast highlands. The summer months also feature strong winds and sandstorms. Baghdad averages five dust storms per month during July. During the winter, the mean daily maximum temperature is 17°C (64°F); however, temperatures are colder in the highlands.

Ninety percent of rain falls between November and April. Most of that falls between December and March. The remaining 6 months, particularly June through August, are dry. Precipitation is highest in the northeast highlands. The area receives 760 to 1,000 millimeters (30 to 40 inches) of rain annually and snow up to 3 months per year in some places. Mean annual rainfall ranges between 100 and 170 millimeters elsewhere in the country.

The summer months also feature two types of wind. The southerly and southeasterly *sharqi* is a dry, dusty wind with occasional gusts of 80 kilometers per hour that occurs from April to early June and again from late September through November. From mid-June to mid-Sep-



Baghdad and Al Basrah Weather



Mosul and As Sulaymaniyah Weather

tember, the prevailing wind is called the *shamal*; it is a steady wind that blows from the north and northeast. The arid air brought by the *shamal* allows the sun to heat the land surface, but the constant breeze has some cooling effect.

Environment

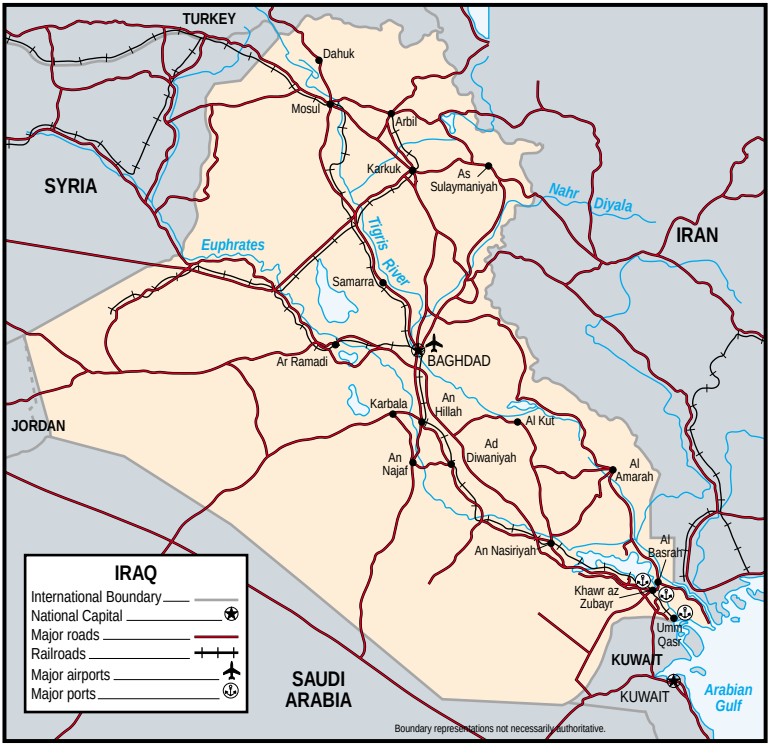
Iraq's infrastructure, damaged during the 1990-91 Gulf War, fails to meet basic sanitation and environmental health needs. More than half the population obtains water from polluted sources. Housing shortages and displaced persons are prevalent in most cities. Extreme heat, intense sunlight, blowing dust, scarce water, and large quantities of unexploded ordinance littering the desert present significant risk. Summer temperatures exceeding 43°C (109°F) contribute to heat stress in unacclimated individuals. Except in the mountainous northeast, dust storms occur throughout the country. Severe cold and low barometric pressures in the northeast mountains present risks of cold injuries and mountain sickness. Air, water, and soil pollution from industrial and domestic sources also present risk.

TRANSPORTATION AND COMMUNICATION

Transportation

Roads

A major road network was constructed to facilitate troop and supply movement during the Iran-Iraq war. Tarmac roads connect most main towns; the network spreads from Baghdad, which is at the center of the country. The road from Baghdad to Al Basrah near the Kuwaiti border extends some 560 kilometers. By June 1990, most sections had been completed on a 6-lane, 1,264-kilometer international express highway linking Safwan on the Kuwaiti border with the Syrian and Turkish borders. All these roads take in the major towns along their routes. Iraq has 36,438 kilometers of paved roads.



Transportation Network

Railroads

The railroads in Iraq are state-owned and run by the State Enterprise for Iraqi Railways. Maintenance and development of the railway system was severely disrupted by the 1980-88 and 1990-91 wars. The rail routes originate in Baghdad and link to most main cities, including Mosul, Al Basrah, Irbil, Husaibah, and Akashat. There are also routes

that serve major industrial centers. As of 1988, the network was serviced by 436 diesel-electric locomotives, 654 passenger cars, and 12,836 freight wagons.

Air

Iraq has only two major international airports; they are at Baghdad and Al Basrah. However, there are more than 100 other airports throughout the country. Of these, nearly 40 are related to the military; 74 are paved; and 61 have runways longer than 8,000 feet. While much of the Iraqi infrastructure was damaged or destroyed during the 1990-91 Gulf War, much of it has been repaired, particularly military facilities.

Maritime

Iraq lacks adequate port facilities. Hussein may have invaded Kuwait in 1990 in part to increase Iraq's access to the Arabian Gulf. Al Basrah and Umm Qasr are the most used commercial ports for Iraq, though a port was opened at Khor az-Zubayr in 1979 (and subsequently closed in 1980 due to the Iran-Iraq War). Khor az-Zubayr and Umm Qasr are operational again, though only to vessels of 10 meters draught.

Al Basrah can accommodate 12 vessels at the Maqal wharves and 7 vessels at buoys with a usual water depth of up to 10 meters. The port reportedly has a 40-ton gantry crane, 7 front loaders, and some tractors and trailers, all in a 30-acre area. Umm Qasr has space for eight vessels. Container and roll-on vessels can use three general cargo berths for vessels up to 183 meters-long. Umm Qasr now lies partly in Kuwaiti territory after the border demarcation after the Gulf War. The port is now open only for commercial uses; no military craft operate from there.

Communication

Radio and Television

All radio and television broadcasting in Iraq is controlled by the government. According to a 1998 estimate, there are 4.85 million radios in Iraq, with 16 AM, 51 FM, and 4 shortwave radio broadcast stations.

Radio is the most widespread and effective means of mass communication in Iraq. Radio Iraq has both domestic and foreign services. The domestic service broadcasts mainly in Arabic, although Kurdish, Turkoman, and Assyrian are also broadcast from Kirkuk. The foreign service broadcasts in English, French, German, Russian, Swahili, Turkish, and Urdu. Two radio stations broadcast from Baghdad all day, and they can be received by most radios in the country. There are also separate radio stations with programs in Kurdish and Persian.

A 1997 estimate indicates there are 1.75 million televisions in Iraq, with 13 television broadcast stations. Television stations carry two program networks and are located in Baghdad, Al Basrah, Mosul, Kirkuk, Al Amarah, and As Samawah. Baghdad Television is the main government television station, broadcasting over two channels throughout the day. Government-owned commercial television stations also broadcast from Al Basrah, Kirkuk, Mosul, and nine other locations for an average of 6 hours a day. A Kurdish-language television station airs programs for 8 hours each day. Responsibility for Iraqi radio and television stations falls to the Iraqi Broadcasting and Television Establishment, a subordinate element of the Ministry of Culture and Information.

Telephone and Telegraph

According to a 1997 estimate, there are 675,000 telephones in Iraq. Iraq began reconstituting its damaged telecommunication facilities after the 1990-91 Gulf War, and most damaged facilities have since been rebuilt. The domestic network consists of coaxial cables and microwave radio relay links. Coaxial cable and microwave radio relays to Jordan, Kuwait, Syria, and Turkey also exist, although the Kuwait line is probably non-operational.

Newspapers and Periodicals

Iraq has six daily newspapers, all of which are published in Baghdad, with a total circulation of 660,000. A subordinate element of the Ministry of Culture and Information, the General Establishment for Press

and Printing, licenses newspapers and other periodicals and also directly publishes two of Iraq's daily newspapers. The largest of Iraq's newspapers, *Ath-Thawra*, is issued by the Ba'ath Party; another, Babil, is run by Saddam Hussein's son, Uday. There are also seven weekly papers, all published in Baghdad. The government's Iraqi News Agency (INA) distributes news to the foreign press based in, or passing through, Iraq.

Satellites

Iraq has two INTELSAT earth stations (one Atlantic Ocean and one Indian Ocean), one INTERSPUTNIK satellite earth station (Atlantic Ocean Region) and one ARABSAT satellite earth station (non-operational).

CULTURE

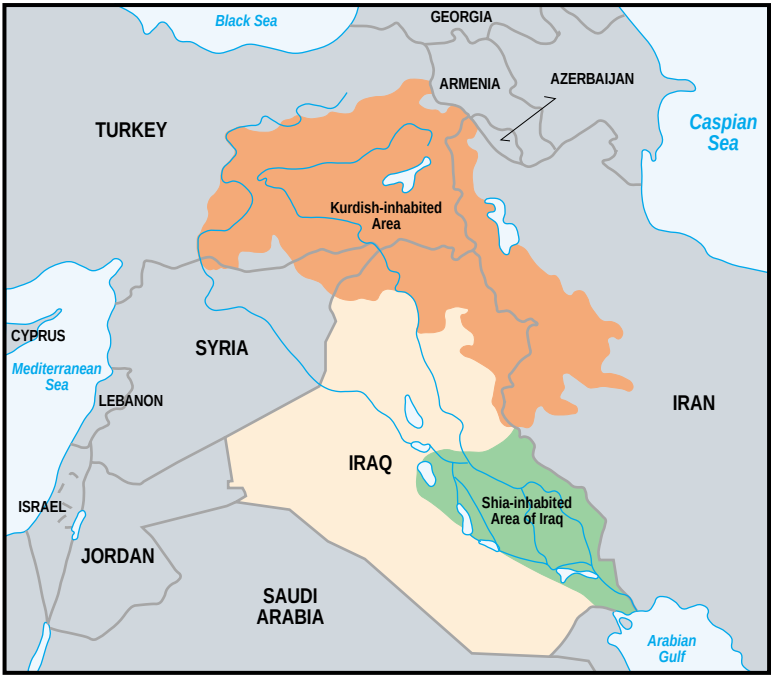
Society

People

Seventy-five percent of Iraqis are Arabs. A Kurdish minority comprises 20 percent of the population; the remaining 5 percent is composed of Turkomen, Assyrian, and others. The Kurds are the majority in the north and northwest of the country where they were forced to settle due to economic constraints and border crossing restrictions. Most Kurds are herdsmen and farmers, though many have moved to the cities, particularly Mosul, Kirkuk, and Sulaymaniyah. In the 1970s, the Kurds' settlement patterns changed with mass relocation. Many were held in detention camps in the desert during the Iran-Iraq war. The Iraqi government is suspicious of Kurdish separatism and seeks to control the group. The Kurds are divided into three separate groups. These groups' inability to reconcile their differences has prevented them from presenting a unified front to both Saddam Hussein and the world.

The Arab population is split between the Shi'a majority in the south and the Sunni who live mostly in the central part of the country, around Baghdad. There are two Arab groups that have not been assimilated into the population. The Marsh Arabs inhabited the lower Tigris and Euphrates River delta until this area was drained by the Iraqi government. Most of the Marsh Arabs fled to neighboring Iran. There is also a small, nomadic bedouin population that inhabits the desert regions.

Population Density



Dissident Area

Seventy-five percent of the population lives in the flood plains that make up only 25 percent of the total land area. Nearly 70 percent of the population is urban; Baghdad is the largest city.

Ethnic and religious persecution by Iraq's government against segments of its population, combined with the long-standing UN economic embargo against Iraq, have left many of Iraq's people deprived of basic public services. Iraq's resources have been directed toward military activities and military hardware acquisition, with little investment in domestic infrastructure. The Gulf War damaged Iraq's infrastructure.

Given Iraq's high population growth rate and its current political situation, living conditions will worsen for most segments of the population.

Education

Fifty-eight percent of the Iraqi population is literate despite the fact that 53 percent of the population over the age of 10 has had no formal schooling. Seventy percent of the male and 45 percent of the female populations are literate. Twenty-one percent of the people have had primary education, while 12 percent have had secondary education. Four percent have received undergraduate or post-graduate education.

Religion

Islam is the state religion. Ninety-seven percent of the population belongs to the two main Muslim sects, Shi'a (60 percent) and Sunni (37 percent). The remainder is Christian or of another religion. Iraq and Bahrain are the only Arab countries where the Shi'a form the majority of the population. Historically, Shi'a Muslims have been farmers and have endured political and economic disadvantages. Hussein's government has attempted to integrate the Shi'a into prominent positions in the government. The government's suspicion has been that Iran will try to exploit any dissatisfaction felt by the majority Shi'a. The better educated Sunnis have traditionally dominated the government. Since 1958, most members of the government have been Sunni. The Kurds are also Sunni, but their religious practices differ from those of the Arabs.

Customs and Courtesies

Although the Arab world is geographically, politically, and economically diverse, Arabs are more culturally homogeneous than Westerners. All Arabs share basic beliefs and values that cross national or social class boundaries. Social attitudes have remained relatively constant because Arab society is more conservative and demands conformity from its members. Even the beliefs of non-Muslim Arabs are greatly influenced by Islam. While Arab society conforms to specific cultural patterns, it is very

important for the Western observer to be able to identify these cultural patterns and to distinguish them from individual behaviors.

Greetings

An Arab will shake hands gently and may pull those he greets toward him and kiss them on either cheek in greeting. Arabs may also hold hands to walk to other locations. If an Arab does not touch someone he greets, he either does not like him or is restraining himself because he perceives the person is unaccustomed to being touched. After shaking hands, the gesture of placing the right hand to the heart is a greeting with respect or sincerity. (For women, placing the right hand over the heart after serving food is a sign of offering with sincerity.) To kiss the forehead, nose, or right hand of a person denotes extreme respect. Use of appropriate titles such as "Doctor" or "Professor" along with an individual's first name is common.

Talking Distance

Americans prefer to maintain space between themselves and others, generally 48 to 72 inches or, at a minimum, the distance of about one arm's length. Arabs, however, prefer less space between themselves and others; they maintain 12 inches or even less in private conversation. An American will tend to back away when an Arab crowds him, but the Arab will merely step forward. If the American continues to back away, the Arab will continue to step closer or wonder if he offended the American. This exchange has been dubbed the "diplomatic shuffle."

Gestures

There are gestures used in the Arab world that convey different meanings from those used in America. An Arab may signify "yes" with a downward nod. "No" can be signaled in several ways: tilting one's head slightly back and raising the eyebrows; moving one's head back and chin upward; moving one's head back and making a clicking sound with the tongue; or using the open palm moved from right to left toward the person. "That's enough, thank you," may be indicated by patting the heart a few times. "Excellent" is expressed with open palms toward the

person. “OK” may be shown by touching the outer edge of one’s eyes with the fingertips. The “A-OK” (forming a circle with the index finger and thumb of one hand) and “thumbs-up” gesture are considered obscene by Arabs. The left hand is considered unclean; the right hand should be used when gesturing. To beckon another person, all fingers wave with the palm facing downward.

Hospitality

Arabs are generous and value generosity in others. Hospitality toward guests is essential for a good reputation. Arabs assume the role of host readily, regardless of the setting.

Shortly after guests arrive, Arab hosts offer beverages, which should always be accepted as an expression of friendship or esteem. Shops and business offices have employees whose sole duty is to serve beverages to guests. When a guest is served a beverage, he should hold the cup with his right hand, as the left hand is considered unclean.

Arabs expect to be received with hospitality when they are guests, and they judge others on how well they host their guests.

Dress Standards

Arabs are proud and public appearance is extremely important to them. They dress and behave much more formally than Americans do. In the U.S., status is connected to social position, salary, or power. In the Middle East, one’s status is judged by public presentation, from dress to personal conduct. Many people dress formally for work, whether they are professionals or laborers. At work, the laborer may change clothes or even work in his more formal wear. Many Arabs believe Americans dress much too casually.

Those in Iraq should:

- Avoid wearing scanty clothing,
- Wear clothes that prevent sunstroke and sunburn, and
- Wear clothes that allow them to maintain key documents on their persons.

Relationships

Family and Social Interaction

Arab families are often large and strongly influence individuals' lives. The family is the basic societal unit. A patriarchal system, the father is the head of the family and is considered a role model. Although the mother's activities may be limited to housework and child-rearing, she generally exercises considerable influence in the home. Few women work outside the home, though the number has increased with urbanization. Each gender is considered its own social subgroup, interacting only in the home. All activities revolve around family life, and any member's achievement advances the reputation of the entire family.

The maintenance of family honor is one of the highest values in Arab society. Since misbehavior by women can do more damage to family honor than misbehavior by men, clearly defined patterns of behavior have been developed to protect women and help them avoid situations that may give rise to false impressions or unfounded gossip. Westerners must be aware of the restrictions that pertain to contact between men and women. Arabs quickly gain a negative impression of those who behave with too much familiarity toward people of the opposite sex. A Western male should never approach an Arab woman with the intent of pursuing a personal relationship.

The public display of intimacy between men and women is strictly forbidden by Arab social code, including holding hands or linking arms, or any gesture of affection such as kissing or prolonged touching. Such actions, even between husband and wife, are highly embarrassing to Arab observers.

Friendship

Friendship is defined differently by Arabs than by Americans. Arabs believe friends are those whose company is enjoyed. Equally important to an Arab, however, is the duty of a friend to give help and do favors to

the best of his ability. Westerners often feel that Arabs take advantage of them, and Arabs may feel that no Westerner can be a true friend. To avoid such misunderstandings, it is advisable to remember that Arabs and Westerners have different expectations of friendship.

Arabs adhere to strict, formal rules of behavior and politeness. For an Arab, good manners require that one never flatly refuse a request from a friend. This does not mean that the favor must actually be done, but rather that the response must not be stated as a definitive "no." If an Arab friend asks for a favor, it should be done if possible. If the favor is unreasonable, illegal, or too difficult, listening carefully, expressing doubt about the outcome, and promising to help is appropriate. Later, an expression of regret and an offer to do another favor is advisable.

Westerners and Arabs define personal behavior and questions differently. Many Arabs like to discuss money and may ask the cost of items or about others' salaries. It is unusual in Arab society for an adult to be unmarried and for married couples to have no children; many Americans find questions about such topics too personal to ask, but Arabs address such issues. Arabs consider questions asked by a man about women in their families too personal. It is best to ask about the family, not specifically about an Arab's wife, sister, or grown daughter.

Professional Relationships

Key to establishing good working relations with an Arab is to establish a good personal relationship. In professional settings, Arabs operate by personal relations more than by time constraints, mission requirements, or professional skills. Initial business meetings are usually social and rarely include objective analysis, pragmatic application, or frank exchange. Protocol is emphasized through polite conversation and refreshments. Business may be addressed at a subsequent meeting or at a dinner.

Criticism, even if offered constructively, can threaten or damage an Arab's honor and may be taken as a personal insult. Attempting to protect himself and his honor from criticism, an Arab may flatly deny

facts or reinterpret them. Westerners should obscure any corrective remarks and praise good points.

Other Cultural Considerations

Often, an Arab's view of the world is based on five concepts: atomism, fatalism, wish versus reality, extremism, and paranoia.

Atomism. Arabs tend to perceive events as isolated incidents. Emphasis on the part rather than the whole is a key psychological feature of Arab culture. Arabs do not generally subscribe to the Western concept of cause and effect; they often dismiss causal chains of events. These thought processes can cause Arabs and Arab rhetoric to seem illogical or irrational to Westerners who look for a unifying concept.

Fatalism. Arabs usually believe that life is controlled by God's will, or fate, rather than human beings. Contentment with the blessings of the day, tranquility, and acceptance in the face of hardship are part of the Islamic tradition. Fatalism complicates planning with Arabs to change what they consider to be a natural, unchangeable chain of events.

Wish versus Reality. Arabs often use forceful and appealing rhetoric that tends toward exaggeration. In their hyperbole, wish blends with reality; the ideal becomes more real than fact until the Arab is forced to accept reality. Even then, the reality is merely God's will, unalterable by human beings. The tendency to blend ideals with reality makes Arab behavior seem illogical to Westerners. The ability to blend wish and reality into a psychologically acceptable concept explains how Arabs can live in an atmosphere of seeming contradiction; their desire for modernity is contradicted by a desire for Islamic tradition free of Western influence.

Extremism. Many Arabs perceive the world in extremes, perhaps due to the harsh, desert environment that Arabs have lived in for thousands of years. Either there was water or no water; it was either hot or cold. Surrounded by an environment of extremes, Arabs perceive the world in those terms, and this attitude remains prevalent in Arabic society. As a result, Arabs do not address challenges as do Americans; if a plan,

project, or piece of equipment has a problem, then it means the entire plan, project, or piece of equipment is a problem.

Paranoia. Arabs appear paranoid by Western standards. Many perceive problems as part of a plot to foil their attempts to make life more pleasant. Arab history of foreign domination and totalitarian governments may be the root of this paranoia. It often means that Middle Easterners view Americans living in the Middle East as secret operatives. Family members may be suspected of plotting against other family members for opportunities. The government is usually viewed as plotting against the people for its own gain.

MEDICAL ASSESSMENT

While well organized, the health care system does not function effectively. Medical care is generally restricted to major urban areas. Although inadequate, the health care system can provide basic health care services.

Limited amounts of medical materiel and the generally poor quality of the medical infrastructure limit Iraq's ability to effectively handle a disaster. The central ambulance service has limited assets and is restricted to a few large cities. Ambulance services, although crude and unreliable, are available in Baghdad. Most city hospitals use small vans or conscripted private vehicles for patient transport.

Private hospitals offer the best medical care in Iraq and are better equipped than their government counterparts. However, the quality of all health care is below U.S. standards. Moreover, all Iraqi hospitals function well below acceptable U.S. sanitary standards.

Iraq cannot produce or obtain adequate supplies of medical materiel; extreme shortages exist. The quality of most Iraqi-made medical products is substandard.

The blood supply is not safe. Blood banks supply adequate quantities of blood for peacetime needs; some blood is tested for hepatitis and HIV.

Disease Risks to Deployed Personnel

Foodborne or Waterborne Diseases

Sanitation is poor throughout the country, including major urban areas. Local food and water sources (including ice) are contaminated with pathogenic bacteria, parasites, and viruses to which most U.S. service members have little or no natural immunity.

If local food, water, or ice from unapproved sources is consumed, diarrheal diseases can be expected to temporarily incapacitate a very high percentage of personnel within days. Hepatitis A, typhoid fever, and hepatitis E can cause prolonged illness in a smaller percentage of U.S. personnel exposed to contaminated food or water sources.

Vector-borne Diseases

During warmer months (May through November), the climate and ecological habitat throughout the country, but primarily in eastern areas below 1,500 meters, support large populations of arthropod vectors, including mosquitoes, ticks, and sand flies with variable rates of disease transmission.

Malaria is a major vector-borne risk in Iraq. It is capable of debilitating a high percentage of personnel for a week or longer. In addition, other vector-borne diseases, including leishmaniasis, Crimean-Congo hemorrhagic fever, sand fly fever, and West Nile fever are transmitted at varying, often unknown, levels.

Sexually Transmitted Diseases

Gonorrhea, chlamydia, and other infections are common in Iraq. HIV/AIDS and hepatitis B also occur. Though the immediate impact of HIV/AIDS and hepatitis B on an operation is limited, the long-term health impact on individuals is substantial.

Respiratory Diseases

Outbreaks of meningococcal meningitis and influenza occur primarily during the cooler months (November through February) and are associated with crowded living conditions. The overall tuberculosis rates are estimated to be between 100 and 300 cases per 100,000 people. Prolonged contact with the local population may result in conversion rates to tuberculosis skin testing (PPD screening) that may be elevated over U.S. military baseline. PPD screening to detect latent infection may be warranted.

Water Contact Diseases

Lakes, rivers, streams, or other surface water along the Euphrates and Tigris Rivers may be contaminated with schistosomiasis and leptospirosis.

Operations or activities that involve extensive fresh water contact may result in personnel being temporarily debilitated with schistosomiasis and leptospirosis.

Animal Contact Diseases

Human cases of anthrax and livestock occur sporadically. Human rabies cases occur more frequently than reporting indicates.

Key Medical Facilities

Saddam Husayn Cardiac Center

Coordinates	33-19-37N 044-23-17E
Location	Adjacent to Baghdad's central radio/television broadcasting station
City	Baghdad
Type	Private
Beds	200
Capabilities	Medical — general, cardiology; surgery — general, plastic, ear/nose/throat (ENT), urology, renal lithotripsy; ancillary — well-equipped emergency room, intensive care unit (ICU), 6 operating rooms.

Saddam Husayn Cardiac Center

Comments Second best surgical care facility in Iraq. Referral facility for Iraqi notables and foreign diplomats. Emergency generator.

Ibn Sina Hospital

Coordinates 33-18-42N 044-24-23E
Location Right side of Haifa Street, approximately 500 meters before palace gates
City Baghdad
Type Private
Beds 100
Capabilities Medical — general, cardiology; surgical — general, cardiac, plastic, ENT, renal lithotripsy; ancillary — well-equipped emergency room, ICU, operating room, magnetic resonance imaging (MRI).
Comments Best private surgical care facility in Iraq, but its use is limited to Saddam Hussein's family and high-ranking military and political officials. Emergency generator.

Rashid Military Hospital

Coordinates 33-16-53N 044-27-27E
Location Mu'askar ar-Rashid (Rashid Military Camp)
City Baghdad
Type Military
Beds 800
Capabilities Medical — general; surgery — general.
Comments Primary military medical facility.

Saddam Husayn Medical City Complex
(formerly Baghdad Medical City Complex)

Coordinates 33-20-50N 044-22-45E
Location Ar Razi and Al Asharit Streets (North Gate)
City Baghdad
Telephone 4168611, 4169004
Type Civilian
Beds 1,270

Saddam Husayn Medical City Complex
(formerly Baghdad Medical City Complex)

Capabilities Medical — general, pediatrics; surgery — general; ancillary — 2 CT scanners.

Comments All major services. Approximately 1,000 employees. Opened in 1980. Compound includes 650-bed surgical hospital; 220-bed pediatric hospital; Baghdad Medical College; and 11-story, 400-bed subspecialty hospital with 6 operating rooms. Nine-story nurses' residence, nine-story physicians' residence, six- to eight-story nursing home, and three-story conference center. Some buildings sustained blast damage during Operation DESERT FOX in 1998. Underground parking garage approximately 220 meters south of main hospital building. Probably used to treat military casualties. Several emergency generators.

HISTORY

Iraq has a long history; many believe that the Garden of Eden was situated near Al Basrah, where the Tigris and Euphrates Rivers converge. Known for centuries as Mesopotamia, Sumerians, Babylonians, Assyrians, and the later Arabs lived in Iraq. Iraq became part of the Turkish Ottoman empire in the 16th century until that empire disintegrated after World War I. In the peace settlement following the war, the Allies divided the Ottoman lands among them. Britain gained control of the territory that became Iraq. Britain retained control of the country until 1958, when a group of army officers killed the British-imposed king and proclaimed a republic.

In 1961, Kuwait, another British protectorate, gained its independence from Britain. Iraq immediately claimed sovereignty over it, largely because of Kuwait's oil wealth. However, Britain reacted very strongly to the threat to its ex-protectorate and dispatched a brigade to deter the Iraqi aggression. Iraq was forced to back down and, in 1963, recognized the sovereignty and borders of Kuwait.

The Ba'ath Party came to power in a coup in 1968, and Prime Minister Hasan al-Bakr became president and prime minister. The Revolutionary Command Council (RCC) was put in place as the center of governmental power. Saddam Hussein was the key deputy to President al-Bakr. Hussein officially assumed power from al-Bakr in 1979. Hussein asserted his authority by personally executing potential opposition in the RCC to his assumption of power.

Regionally, the 1979 Islamic Revolution in Iran threatened Iraq. The rise of a strong Shi'a government in Iran concerned Hussein; a Shi'a opposition movement was gaining momentum in southeast Iraq. In early 1980, Iranian Ayatollah Khomeini called for Iraqi Shi'a to overthrow the secular Iraqi government. Hussein, therefore, revisited an historic dispute over the Shatt al-Arab waterway and invaded Iran in September 1980.

Hussein underestimated the will of the Iranian people, and may have overestimated the power of his armed forces. After the Iranian government's purging of those in the Iranian military perceived to retain loyalty to the Shah, Hussein may have seen an opportunity to challenge a weakened Iranian force. Iran, however, remained strong enough to halt the Iraqi invasion. By 1982, Iran had reestablished its border and began advancing into Iraqi territory. By 1986, the war had reached a stalemate.

From the outset of the war, the West and the conservative monarchies in Kuwait and Saudi Arabia supported Iraq in its effort to quell fundamentalist Islamic movement in Iran. Both Kuwait and Saudi Arabia loaned vast sums of money to Iraq. The Gulf Cooperation Council increased production of oil to force the price of oil down, thus damaging Iran's oil-dependent economy. The Iranians depended on oil revenues to finance their war effort. The economic hardship became too great. The war ended in July 1988 with Khomeini accepting UN Resolution 598, which called for a cease-fire.

The cost of the war to Iraq and Iran was staggering; several hundred thousand Iraqis were killed or wounded. The war had also cost Iraq US$450

billion. Hussein stalled on the negotiations following the war to avoid admission that he'd been the aggressor. He also wanted to claim victory.

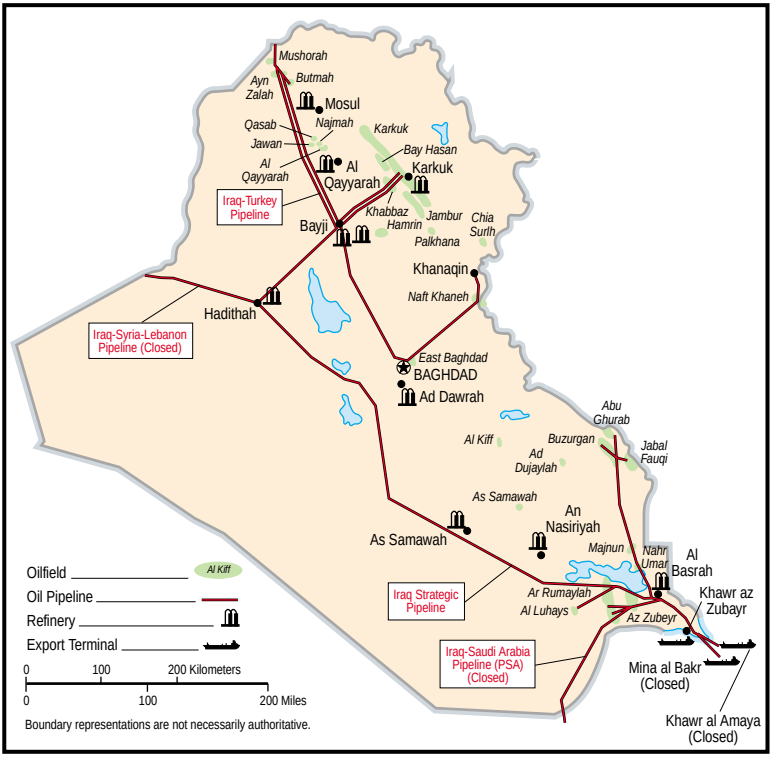
Despite the debts accumulated and continued negotiations to settle the 8-year war, Hussein began a large military expansion after the war. The lack of funds to provide for the Iraqi people remained a problem for Hussein. To acquire oil, gain access to Arabian Gulf ports, and perhaps to divert Iraqis' attention from their domestic hardship, Iraq invaded Kuwait. To ensure that Iran would not oppose Iraq's offensive, Hussein afford Iran a generous settlement.

To justify his attempts at expansion, Hussein lodged a series of complaints against Kuwait over oil reserves on the countries' border. He also accused Kuwait of leading an oil-pricing conspiracy designed to limit Iraqi oil revenues. He demanded that Kuwait reclassify US$12 billion of war loans as gifts. Hussein's preposterous complaints and demands were not addressed to his satisfaction.

In late July 1990, 100,000 Iraqi troops massed on the Kuwaiti border. On 2 August 1990, 350 Iraqi Republican Guard tanks rolled into Kuwait, secured the country in 3 days, and provoked international economic and military reprisals. To consolidate its gains, Iraq formally annexed Kuwait on 8 August 1990, incorporating it as the 19th province, and ordered all foreign ministries and government functions to relocate to Baghdad.

UN condemnation was swift. Plans were laid to assemble a multinational force to isolate and ultimately remove Iraq from Kuwait. The passage of UN Resolution 661 (6 August 1990) leveled economic sanctions and a trade embargo on Iraq. On 29 August 1990, the UNSC passed Resolution 678, setting 15 January 1991 as the deadline for Iraq to withdraw unconditionally from Kuwait or face retaliation.

American, British, and French naval forces assembled in the Arabian Gulf and the Red Sea as part of the first contingent of an international force that would eventually total nearly 750,000 personnel drawn from 31 countries. Following Iraq's refusal to meet the 15 January 1991 dead-



Oilfields

line, a massive air assault was launched. After seriously diminishing Iraq's army, navy, and air force capabilities, multinational forces launched a ground offensive to remove Iraqi forces from Kuwait and destroy Iraqi army assets in southern Iraq. After 100 hours of ground warfare, a temporary cease-fire was declared on 28 February 1991. Iraq disavowed the annexation of Kuwait and accepted all UN resolutions. The United States presented Iraq with several conditions under which

the cease-fire would remain permanent, including the swift and complete return of all coalition prisoners of war and full compliance with UN resolutions. On 11 April 1991, an official cease-fire was signed between Iraq and the allied forces, effectively ending hostilities.

On 24 April 1991, UN observation forces began to replace U.S. troops on the Iraq-Kuwait border. Domestic unrest characterized post-Gulf War Iraq. Regular Iraqi army troops, disgruntled by the inhumane conditions under which they were sent to the front — in stark comparison to the well equipped and supplied Republican Guard units — rebelled upon their return to Iraq. Dissident army troops, backed by other Iraqi opposition groups such as the Shi'a of the marsh areas and Al Basrah, mounted a strong but short but strong attack on Republican Guard, local Ba'ath Party headquarters, and other loyalist positions in southern Iraq. Intense fighting continued for several weeks but, by the middle of March 1991, most armed opposition ceased. A southern no-fly zone was initiated to protect Shi'a Muslim rebels from air attacks. The zone initially extended from the 32d parallel to the border of Kuwait and Saudi Arabia.

In northern Iraq, Kurdish rebels (*peshmerga*) consolidated control over Kurdistan by capturing several prominent towns. However, these advances ended quickly as Saddam Hussein brought the air and ground assets that were not destroyed in the Gulf War, most notably helicopter gunships. One million Kurds and other Iraqis fled to the more remote, mountainous northern regions of the Iraq-Turkey border. The UN established a safe-haven for Kurdish refugees, offering a degree of safety from Iraqi troops. By late April 1991, Kurdish and Iraqi leaders reached an agreement whereby the Kurds could return to their towns without Iraqi interference.

The UN further ensured the safety of Kurds by establishing a no-fly zone in the north of Iraq, denying Iraqi forces the use of fixed- or rotary-wing aircraft. In northern Iraq, allied forces established a security zone for Kurdish refugees encompassing territory from the Turkish border south to the 36th parallel, and from the town of Zakhu 45 miles eastward

to Amadiya. This area had been patrolled by military forces from the United States, Britain, France, and relief personnel from approximately 20 other countries.

Saddam Hussein sought to consolidate his control over the military by executing, purging, and reassigning several corps and divisional commanders, as well as a large number of senior and middle ranking officers. This eliminated potential opponents and disloyal elements, and also replaced those killed during the war or uprisings. Saddam's relatives, family members, and other Sunni Arabs from Tikrit, Saddam's home town, were featured prominently as replacements.

The establishment of two, Coalition-enforced no-fly zones in Iraq is a continuing reminder Iraq's weakened defenses. Saddam Hussein rejected the no-fly zones in late 1992 and continued to stage air attacks against Shi'a rebels in the south. On 27 December 1992, a U.S. F-16 shot down an Iraqi MiG-25; in January 1993, Coalition forces shot down a MiG-29. No Coalition aircraft had been lost in combat since the Gulf War. In January 1993, Iraq moved surface-to-air missiles (SAMs) into the no-fly zones and rejected the U.S./Allied ultimatum to remove them, prompting a Coalition response. In January, the United States, Britain, and France staged air strikes against four missile/radar sites and two concentrations of mobile antiaircraft missile batteries inside the southern no-fly zone, rendering Iraqi air defenses there inoperable. In June 1993, in response to an Iraqi attempt to assassinate former U.S. President George Bush while on a visit to Kuwait, 23 U.S. cruise missiles destroyed Iraq's principal intelligence facility in downtown Baghdad.

The economic embargo had its intended effect. As domestic conditions worsened, Hussein complied nominally with the conditions of the cease-fire. In October 1994, however, Hussein moved two divisions of the Republican Guard Force Command to the Kuwaiti border to pressure the Coalition into removing sanctions.

The United States deployed a carrier battle group, more than 28,000 troops, and 200 additional aircraft into the region. The Iraqi regime backed down. As a result of Iraq's confrontational stance, the UN imposed a "no-drive zone" on Iraq. The imposition prohibits the reinforcement of Iraqi troops and armor south of the 32d parallel. In November and December 1994, Iraq gave the appearance of conciliation by formally recognizing the sovereignty, territorial integrity, and political independence of Kuwait, and the international border demarcated by the UN in 1993.

Saddam Hussein's regime has weathered many difficulties since the end of 1994. UN sanctions and UN Special Commission (UNSCOM) inspection/monitoring efforts remained in effect, but Iraq experienced domestic turmoil as well. In March 1995, the Iraqi National Congress, an umbrella Iraqi opposition group, began a combined offensive aimed at seizing the northern Iraqi cities of Kirkuk and Mosul and instigating a rebellion among Iraqi troops. However, Western support for the offensive was not forthcoming, and the action quickly fell apart. This left the Patriotic Union of Kurdistan (PUK) — the only opposition group to actually begin military operations against the Iraqis as part of the offensive — engaged in unilateral combat operations with Iraqi forces in the vicinity of Mosul. Also in 1995, several military officers of the al-Dulaymi tribe from western Iraq staged a coup attempt in May. Hussein tortured and executed the participants, then returned their mutilated bodies to their kinsmen. In response, a Republican Guard battalion led by outraged al-Dulaymi military officers attacked the Iraqi prison at Abu Gharayb. Two loyal Republican Guard brigades defeated the rebels, but Hussein was disturbed by the fact that some of his normally loyal Republican Guards had turned against him. A purge of the Republican Guards followed in July.

In August 1995, Hussein Kamil Hassan al-Majid, Hussein's brother Saddam Kamil, and their families fled Baghdad to Jordan. The significance of this defection was acute; the wives of the men were Saddam Hussein's daughters, and both men held significant posts in Saddam

Hussein's power structure. Hussein Kamil had been Minister of Industry and Military Industrialization and in charge of Iraq's weapons of mass destruction (WMD) programs. Saddam Kamil was an officer in Saddam's Presidential Guard.

The defection resulted less from disloyalty than fear; Saddam Hussein's son, Uday, had threatened the lives of the men. Once in Jordan, however, Hussein Kamil denounced the Iraqi regime and divulged numerous secrets about Iraq's WMD programs, forcing the Iraqis to attempt damage control and release thousands of documents pertaining to WMD to UNSCOM. Hussein Kamil expected to be accepted by the West as a viable leader to replace Saddam Hussein when assistance was not forthcoming, Hussein Kamil began to chafe under his exile in Jordan. In February 1996, the Kamil brothers and their families eagerly returned to Baghdad and their positions of power, accepting Saddam Hussein's offer of amnesty. Once back in Iraq the brothers were promptly executed by Saddam Hussein, who announced to the world that vengeful kinsmen had killed them for their betrayal of Iraq.

Saddam Hussein has maintained firm control of Iraq. He has purchased the loyalty of supporters and security forces, and has maintained his military. The Iraqi people, however, continue to suffer. Living standards further deteriorated in 1995. Prices more than doubled, and necessities such as infant formula and medicines became unavailable. In January 1996 Saddam Hussein decreed economic austerity measures to counter soaring inflation and widespread shortages caused by UN sanctions. To alleviate some of the Iraqi people's hardship, the UN allowed Iraq to sell US$2 billion worth of oil every 6 months. All the proceeds of this limited oil sale had to be deposited in a UN escrow account and used to purchase food, medicine, and other essential materials and supplies for Iraqi citizens.

This plan was nearly derailed in August 1996 when Iraqi forces, assisted by Kurdish Democratic Party (KDP) fighters, assaulted the PUK-held

northern city of Irbil, the headquarters of the Iraqi opposition. The seizure of Irbil severely damaged Kurdish and Iraqi opposition unity, and strengthened Hussein's power. Unilateral U.S. cruise missile strikes in retaliation for the attack and the extension of the "no-fly zone" from the 32d to the 33d parallel strengthened Hussein's image abroad as an unjustly persecuted Arab leader. The UN food-for-oil plan was implemented in January 1997, and large sums of money from the program are used by Saddam Hussein to support his loyalists and military. The situation for Iraqi citizens nominally improved as a result of the food-for-oil program, although not to the extent possible if Saddam Hussein provided more of the available support to his populace. Iraqi smuggling of petroleum products overland to Turkey and through Iranian waters in the Arabian Gulf, in violation of UN sanctions, also brought in US$300-$400 million a year for Saddam Hussein. Proceeds supported the Iraqi regime rather than improved the welfare of the Iraqi people.

His adept use of propaganda, rebuilt military, loyal supporters, and steady revenues provided Hussein a level of strength and stability unseen since the Gulf War. However, he is still deeply frustrated by UN sanctions and desires to have them lifted so he can pursue his ambitions of regional power. In October 1997, as UNSCOM weapons inspectors closed in on key information regarding Iraq's chemical and biological weapons programs, Saddam Hussein once again became confrontational. He recognized debate in the UN Security Council (UNSC) over UN policy toward Iraq, with the French and the Russians advocating the Iraqi case, and he intended to exploit these divisions in an effort to have sanctions lifted. His chance came following a UN vote that threatened foreign travel restrictions on Iraqi officials if Iraq continued to obstruct UNSCOM inspections. Saddam Hussein expelled the U.S. members of the UNSCOM team from the country, hoping to achieve concessions from the UN in return for renewed cooperation. UNSCOM chairman Richard Butler suspended all UNSCOM activities in Iraq, and the UNSC unanimously condemned Iraq for its actions. After several weeks of tension, Russia pledged to press Iraq's case in the UNSC for removal

of sanctions. Russia's diplomatic intervention defused the crisis, but Saddam Hussein's frustrations with sanctions continued.

Baghdad again balked at cooperating with UN inspections in February 1998, once more raising the likelihood of U.S. military strikes against Iraq. UN Secretary General Kofi Annan secured a last-minute accord with the Iraqi regime that allowed UN inspectors to continue their efforts and forestalled a U.S. attack on 23 February 1998. However, this agreement proved to be ineffective when Iraq demanded relief from sanctions, suspended cooperation with UNSCOM, and expelled the weapons inspectors in August 1998. This Iraqi intransigence helped fuel the passage of the Iraq Liberation Act in October 1998, which allocated U.S. government funding to Iraqi opposition organizations dedicated to replacing Saddam Hussein's regime.

The UN responded to Iraq's belligerence by suspending regular sanctions reviews, thereby ensuring sanctions would continue indefinitely unless Iraq renewed cooperation with the UN. Iraq protested but mutual agreement was not reached. As the disagreement continued into November 1998, the United States prepared for military action against Baghdad. The prospect of more damaging airstrikes caused the Iraqis to back down and agree to allow the inspectors back into Iraq, but on 8 December, UNSCOM chairman Richard Butler reported that Iraq was still impeding inspections. Subsequently, on 9 December, an inspection team that conducted surprise visits to potential WMD-related sites was denied access to Ba'ath Party Headquarters in Baghdad. Other inspections occurred without incident, but on 13 December, the inspection team cut short its work and unexpectedly departed Iraq. The remaining UN inspectors followed shortly after.

On 15 December 1998, Butler delivered his annual report to the UNSC on the status of UN inspections. In this report, Butler accused Iraq of implementing a campaign to obstruct UNSCOM access to WMD-related records and sites. On 16 December, the United States and the United Kingdom began a 3-day air campaign named Operation

DESERT FOX against key WMD and military targets in Iraq. Washington and London conducted these airstrikes to punish Baghdad for its obstructionism and to induce Iraq to cooperate fully with UNSCOM. Operation DESERT FOX proved to be a costly campaign for Saddam Hussein. The airstrikes heavily damaged a number of military and suspected WMD production facilities. However, the airstrikes did not cause Saddam Hussein to renew cooperation with the UN. Instead, the Iraqi regime portrayed itself as the victim and claimed in the U.S. press that UNSCOM inspectors had turned over information to U.S. intelligence agencies, and asked the UN to remove American and British personnel from the UN missions in Iraq. Since Operation DESERT FOX, no UN weapons inspectors have entered Iraq, and Baghdad has been able to restart its weapons programs without UN preventative measures.

In February 1999, the Iraqi regime was faced with a crisis following the assassination of Grand Ayatollah Sayyid Muhammed Sadiq al Sadr, a Shi'a spiritual leader, and his two sons in southern Iraq. Various anti-regime groups blamed Saddam Hussein for these murders, and a number of reports surfaced indicating that significant internal unrest occurred as Shi'a in Baghdad and in southern Iraq conducted 3 days of protests against Saddam's tactics. The regime responded by ruthlessly suppressing the protests and killing a large number of protestors. Discontent continued through 1999, but Saddam Hussein eventually strengthened his hold on power through effective security operations.

In December 1999, the UN attempted to restart its inspection effort in Iraq. On 17 December, the UN Security Council passed a resolution creating the UN Monitoring, Verification, and Inspection Commission (UNMOVIC) to replace UNSCOM. Iraq, however, rejected this resolution and announced its refusal to cooperate with further inspections. Despite this, UN appointed Hans Blix, former head of IAEA inspections in Iraq, to lead UNMOVIC. Blix formulated a plan and assembled a team to conduct inspections, but Baghdad's intransigence forestalled his efforts. Even though the UN's weapons monitoring efforts were thwarted by Iraq, the IAEA conducted an inspection of Iraq's nuclear

material in January 2000. The IAEA report indicated Iraq complied with the inspection team and had not disturbed the uranium locked away by the IAEA years before.

In March 2000, Iraq held its National Assembly elections. Uday Saddam Hussein, Saddam's eldest son, won a seat in the 250-member organization.

Iraq undertook a number of efforts in 2000 to reduce its political and economic isolation. Baghdad's increased diplomatic effort was rewarded during August 2000 when Venezuelan president Hugo Chavez, who was touring OPEC states in August, became the first elected head of state to visit Iraq in a decade. Also in August 2000, Iraq opened the international airport in Baghdad, which prompted a number of countries opposed to sanctions to disregard UNSC resolutions and allow a larger number of international flights into Iraq. Baghdad was encouraged by this show of support and, in October 2000, resumed passenger flights within Iraq.

Relations between Syria and Iraq also improved when Iraq began pumping crude oil to Syria, despite UN sanctions, through a pipeline closed since 1982. In 2002, Izzat Ibrahim, vice-chairman of the Iraqi RCC, visited Syria and held talks with Syria's President Bashar al-Assad on 9 November.

The renewed conflict between the Israelis and the Palestinians in September 2000 provided Saddam Hussein with a propaganda opportunity. Saddam deployed a number of Republican Guard and Army units to western Iraq, claiming that he was prepared to support the Palestinians militarily in their struggle against Israel and encouraging other Arab leaders to do the same. Saddam then held the largest military parade since 1990 in Baghdad in late December 2000 in an effort to showcase Iraq's military might and support for the Palestinians. The Iraqi regime also provided free medical care to Palestinians wounded in the *intifadah* and paid money to the families of those killed. These efforts endeared Hussein to Arabs were angered by Israeli actions, but they directly challenged the moderate Middle Eastern leaders who argued for diplomacy and peace.

Even as Saddam's popularity among Arabs grew, Iraqi efforts to improve command and control resulted in more U.S./UK airstrikes in February 2001. The United States reacted to reports that Iraq, with Chinese assistance, was installing fiber-optic communications lines to connect its air defense facilities. President George W. Bush claimed that the strikes were needed to protect U.S. and UK pilots patrolling Iraq's no-fly zones. The strikes had little support within the international community.

Despite the pressure exerted by the United States and United Kingdom, Hussein continued to prepare for the future. In mid-2001, rumors circulated that Saddam was preparing his second son, Qusay, to succeed him. Qusay was elected to the Iraq Regional Command of the Ba'ath Party and appointed to the RCC as the Deputy of the Ba'ath party, Military Bureau. Some speculated that Saddam orchestrated these appointments to ensure that other regime officials would not challenge his trusted son if Hussein were incapacitated and unable to rule Iraq. Hussein also negotiated a number of free trade agreements with neighboring countries to improve Iraq's economy.

As Saddam Hussein maintained his efforts to perpetuate his regime and improve his image abroad, two devastating terrorist attacks on the United States occurred on 11 September 2001. While U.S. intelligence determined that the Al Qaida terrorist network, led by Usama bin Ladin was responsible for these attacks, some speculated that Iraq assisted in the effort. When anthrax was found in the U.S. mail system in autumn 2001, more speculation focused on Iraq as the culprit. However, the U.S. government maintains that there is no conclusive evidence to tie the Iraqi regime to either the anthrax or the terrorist attacks.

Following 11 September 2001, Saddam Hussein went to great lengths to not provoke the U.S. and to avoid being included in the War on Terrorism. Challenges to no-fly zone enforcement abated, and Saddam even offered some sympathetic statements to the people of the United States. This was not enough, however, to keep him out of the limelight for long.

In January 2002, President Bush stated in his State of the Union address that Iraq was a member of an axis of evil that threatened the world with its weapons of mass destruction. Shortly after this, President Bush began to openly advocate changing the regime in Iraq. Saddam Hussein reacted by seeking regional support to avoid a conflict but also began to prepare militarily for a potential U.S. military campaign aimed at overthrowing his regime.

Chronology

1899	Britain signs treaty with the al-Sabah family putting Kuwait under British protection.
1920	Mandate for Iraq awarded to UK by the League of Nations.
1921	Britain installs Emir Faisal as King of Iraq.
1932	Saudi Arabia proclaimed by Abd al Aziz; Iraq declares independence.
1958	Iraqi monarchy overthrown in coup by General Abdul Karim Qasim.
1960	Organization of Petroleum Exporting Countries (OPEC) founded.
1961	Kuwait established as independent nation.
1963	Coup overthrows Qasim; Gen. Abdul Salam Aref installed in power.
1966	Abdul Rahman Aref succeeds his brother as leader of Iraq.
1968	Ba'ath party coup; Ahmad Hassan al-Bakr installed, Saddam Hussein becomes chief deputy.
1977	Sheikh Jaber Al-Ahmand Al-Jaber Al Sabah becomes Emir of Kuwait.
1979	Saddam Hussein succeeds Bakr as president of Iraq.
22 Sep 80	Iraq invades Iran, starting 8-year war.
7 Jun 81	Israel launches air attack against Iraqi nuclear facilities.
14 Jun 82	King Fahd assumes power in Saudi Arabia following the death of King Khalid.
Apr 84	Attacks begin on tankers in the Arabian Gulf.

17 May 87	Iraq attacks *USS Stark*, killing 37 U.S. sailors.
1988	Saddam Hussein orders use of chemical weapons on Kurds.
Aug 88	Iran-Iraq War ends.
17 Jul 90	Saddam Hussein accuses Kuwait of oil overproduction and theft of oil from Rumaylah oilfield.
25 Jul 90	U.S. Ambassador to Iraq April C. Glaspie tells Saddam Hussein that the Iraqi/Kuwaiti dispute is an Arab matter, not one that affects the United States.
2 Aug 90	Iraq invades Kuwait; President Bush freezes Iraqi and Kuwaiti assets; UN calls on Saddam Hussein to withdraw immediately.
6 Aug 90	Economic sanctions authorized by the UN against Iraq and Kuwait.
8 Aug 90	Iraq annexes Kuwait.
9 Aug 90	UN declares Iraq's annexation of Kuwait invalid.
29 Nov 90	UNSC authorizes force after 15 January if Iraq does not withdraw from Kuwait.
15 Jan 91	Deadline established by UN Resolution 678 for Iraqi withdrawal.
16 Jan 91	Operation DESERT SHIELD becomes Operation DESERT STORM as U.S. warplanes attack Baghdad, Kuwait, and other military targets in Iraq.
23 Feb 91	Ground war begins with Marines, Army, and Arab forces moving into Iraq and Kuwait.
27 Feb 91	President Bush orders a cease-fire effective at midnight in the Kuwaiti theater of operations.
2 Mar 91	Shi'a Muslims in southern Iraq, followed by Kurds in north, rebel against Saddam Hussein's rule. Iraqi army crushes both revolts. Kurds, protected by the allies, take control of large area of the north.
3 Mar 91	Iraqi military leaders formally accept cease-fire terms.
23 Sep 91	UN weapons inspectors find documents detailing Iraq's nuclear weapons program and say Iraq was close to building a bomb.

27 Aug 92	"No-fly zone" imposed over southern Iraq to stop air attacks on Shi'a Muslim rebels. United States and its allies begin air patrols, which continue today.
7 Jan 93	United States says Saddam Hussein moved SAMs into southern Iraq; Baghdad refuses to remove them; allied warplanes attack Iraqi missile sites and warships fire cruise missiles at nuclear facility near Baghdad.
13 Apr 93	One day before President George Bush was to arrive in Kuwait, 14 arrests made for plotting to assassinate him; Washington says plot organized by Iraqi intelligence.
27 Jun 93	U.S. warships fire 24 Tomahawk cruise missiles at intelligence headquarters in Baghdad in retaliation for assassination plot. By Iraqi count, eight people die.
Oct 94	Two Iraqi Republican Guard armor divisions deploy south to the Kuwait border. President Clinton dispatches carrier group, 28,000 troops, and over 200 warplanes to Gulf. The Iraqis pull back.
Nov-Dec 94	Iraq formally recognizes the sovereignty, territorial integrity, and political independence of Kuwait and the international border demarcated by the UN in 1993.
Mar 95	A reported "nationwide offensive" by a coalition of Iraqi opposition groups falls apart due to lack of international support. The PUK conducts offensive operations against the Iraqi army in the vicinity of Irbil, but no gains are made.
May-Jun 95	Twenty Iraq military officers, all members of the Sunni al-Dulaymi, are tortured and killed for plotting a coup. A Republican Guard battalion, led by al-Dulaymi officers, rebel at Abu Gharayb following these executions, but the uprising is rapidly squashed by loyal Republican Guard units.
8 Aug 95	Hussein Kamil al-Majid, who headed Iraq's secret drive to build weapons of mass destruction, defects to Jordan with his brother and their wives, both of whom are daughters of Saddam Hussein. Hussein Kamil vows to topple Saddam Hussein.

6 Jan 96	Saddam Hussein decrees economic austerity measures for Iraq to cope with soaring inflation and widespread shortages caused by UN sanctions.
20 Feb 96	Hussein Kamil returns to Iraq after providing the UN and the U.S. information about Iraq's arsenal, how Saddam Hussein tried to avoid UNSC resolutions, and how Saddam Hussein's government was organized. Hussein Kamil and his brother Saddam Kamil are executed by Saddam Hussein.
22 May 96	Iraq reaches deal with UN to sell US$2 billion in oil for 180 days to buy food and medicine.
31 Aug 96	In the face of U.S. warnings, Saddam Hussein sends tanks, troops, and helicopters into northern Iraq and capture Irbil, a key city inside the Kurdish safe-haven protected by U.S.-led forces.
2 Sep 96	U.S. ships and airplanes fire dozens of cruise missiles at military targets to punish the Iraq military and discourage it from following Saddam Hussein.
Jan-Jun 97	Food-for-oil program implemented.
7 Jun 97	UNSC Resolution 1111 renewed food-for-oil program.
23 Jun 97	UNSC Resolution 1115 insisted on access to Iraqi sites.
23 Oct 97	The UNSC adopt Resolution 1134 stating its intention to impose travel restrictions on Iraqi officials if Baghdad continues to obstruct weapons inspections.
29 Oct 97	UNSCOM suspend operations in Iraq and cancel talks with Iraqi officials after being told by Baghdad that American weapons inspectors will not be allowed in the country.
5 Nov 97	UN envoys meets with Saddam Hussein to communicate to him UNSC unity on the UN position that the UN determines the composition of the UNSCOM inspection team.
7 Nov 97	UN envoys hold a press conference and announce that Saddam Hussein rejects the UN position on the composition of the UNSCOM inspection team.
10 Nov 97	UNSCOM provides a list of Iraqi noncompliance with UNSC resolutions.

12 Nov 97	UNSC voted unanimously to issue UNSC Resolution 1137, which imposes travel restrictions on Iraqi officials and military officers.
13 Nov 97	UNSCOM Chairman Richard Butler announced decision to withdraw all UNSCOM staff 14 November and leave a skeleton staff at the Baghdad Center to sustain the UNSCOM facility pending resolution of the crisis.
20 Nov 97	The Iraqis agree to a Russian proposal that allows the UNSCOM inspectors back into Iraq. Iraq in return gains Russia as an ardent advocate in the UNSC.
23 Feb 98	UN Secretary-General Annan arranges for Iraqi to cooperate with UN inspectors to prevent a U.S. military attack.
31 Oct 98	U.S. President Clinton signs the Iraqi Liberation Act to provide U.S. aid to the Iraqi opposition.
16-19 Dec 98	The U.S. and UK conduct airstrikes (Operation DESERT FOX) to force Baghdad to cooperate with the UN.
19 Feb 99	The assassination of a Shi'a spiritual leader results in Shi'a unrest in Baghdad and in southern Iraq.
17 Dec 99	UNMOVIC is established to carry on inspections in Iraq in place of UNSCOM.
01 Mar 00	Hans Blix is assigned to head UNMOVIC.
27 Mar 00	Iraq holds National Assembly elections.
17 Aug 00	Iraq reopens the international airfield in Baghdad; many neighboring countries allow international flights to enter Iraq despite UN sanctions.
Oct 00	Iraq deploys military forces to western Iraq to show support for the Palestinian *intifadah.*
31 Dec 00	Hussein holds the largest military parade in Baghdad since 1990 to demonstrate Iraq's military might.
16 Feb 01	The U.S./UK conduct air strikes against Iraq's air defense network.
17 May 01	Qusay Saddam Hussein elected to the Ba'ath Party's Revolutionary Command Council.
29 Jan 02	President Bush includes Iraq in the "Axis of Evil" during his State of the Union address.

GOVERNMENT AND POLITICS

Government

National Level

Iraq is controlled by Saddam Hussein's totalitarian regime and supported by the military. The Iraqi constitution is theoretically the basis of government, but the focus of power is, in reality, Saddam Hussein.

Iraq is officially a republic. It had a provisional constitution promulgated on 22 September 1968 that went into effect on 16 July 1970. Iraq adopted an interim constitution in 1990 that declared the people of Iraq are the source of the country's political authority. According to the constitution, an elected president and Council of Ministers hold executive power, an elected legislature holds legislative power, and an independent judiciary wields judicial power. However, in practice, the Revolutionary Command Council, chaired by Saddam Hussein, exercises all of Iraq's executive, legislative, and judicial powers.

In 1968, the Arab Socialist Ba'ath Party came to power during a military coup. The Iraqi regime has rewritten the history of this event to portray the coup as a revolution. In 1968, the Ba'ath Party instituted a provisional constitution that established a Revolutionary Command Council (RCC) to promulgate laws until a National Assembly could be elected and select the head of state (the president) with a two-thirds majority. The Secretary-General of the Iraq Command of the Ba'ath Party became chairman of the RCC, thereby placing the Ba'ath Party in control of Iraq.

Through a variety of intrigues, Saddam Hussein became head of the Ba'ath Party and was appointed president by the RCC on 16 July 1979. He has since exercised nearly exclusive power in Iraq.

Despite the 1990 interim constitution that places governmental authority in the hands of the Iraqi people, Iraq's supreme policy-making body

remains the RCC. A two-thirds majority of the RCC may modify the constitution. Saddam Hussein, as Secretary-General of the Iraq Command of the Ba'ath Party and chairman of the RCC, makes policy decisions that are supported by the other members of the RCC, who then supervise the work of the cabinet and other state institutions to ensure that the decisions are carried out.

Head of State. Under the provisional constitution of 1968, the RCC selected Iraq's head of state, the president. Saddam Hussein's total control over the Ba'ath Party and the RCC ensured that he would be chosen as president. The president supervises the implementation of the constitution and its laws. He also issues special amnesty and ratifies judgments of capital punishment. He appoints and relieves Iraq's vice presidents, judges, provincial governors, and all state civil and military employees. He conducts international negotiations, concludes international treaties, and receives international diplomatic representatives to Iraq. The president is the supreme commander of the armed forces, and he may declare a state of total or partial emergency as he sees fit.

A constitutional amendment approved by the RCC in 1995 states that the elected chairman of the RCC will assume the presidency for a 7-year term subject to the approval of the National Assembly and a national referendum. These elections do not, however, offer the legislature or population a choice of candidates – they are simply asked to vote yea or nay to the question, "Do you want Saddam Hussein to be the president of the Republic of Iraq?" Given Saddam's immense power within Iraq and ability to terrorize those that oppose him, he is ensured the approval of the National Assembly and the Iraqi public. The most recent public referendum was on 15 October 1995.

Saddam Hussein was last elected unanimously as secretary-general of the Iraq Command of the Ba'ath Party at the Party Congress on 17 May 2001. This "election" provided him the formal legitimacy to remain chairman of the RCC and president of Iraq, even though his "election" was never in doubt.

Executive Branch. The RCC appoints Iraq's executive branch, which consists of a prime minister and a council of ministers. Saddam Hussein was appointed prime minister on 29 May 1994.

The RCC, which is beholden to Saddam Hussein because he holds all the key offices in Iraq, supervises the activities of council of ministers to ensure that Saddam's decisions are carried out.

Legislative Branch. The RCC exercises some legislative power, but the legislative branch of the Iraqi government is the National Assembly. This 250-member body has no real legislative authority; it endorses decisions made by Saddam Hussein. Two hundred-twenty members represent 59, multiseat constituencies. Thirty members are selected by the president to represent the northern Kurdish provinces of Dahuk, Arbil, and Sulaymaniyah. All members of the National Assembly serve for 4 years but have no real governmental power.

The National Assembly was first elected in 1980. The last legislative elections occurred on 27 March 2000. Of note, Saddam Hussein's eldest son, Uday, was elected to represent Baghdad province's fifth constituency during this election.

Judicial Branch. Iraq has a ministry of justice and a supreme judicial council known as the court of cassation. The Iraqi court system is divided into criminal courts, civil courts, and courts of personal status. The court hierarchy consists of courts of first instance, where initial decisions are rendered; courts of appeals, where decisions may be taken for review; and the court of cassation, the highest official judicial authority.

The courts of personal status, also known as shari'a courts, have jurisdiction over all matters of first instance pertaining to the personal status of Muslims such as marriage, family, and inheritance. Jurors in these courts consist of either *qadis* (religious judges) or judges from civil courts.

Several other courts exist, to include the national security courts, the court of inquiry, the magistrate's court, the juvenile court, military courts, municipality courts, and price control magistrate courts. They all

have specialized jurisdictions outside the purview of the ministry of justice and provide Saddam Hussein with the ability to run the country's legal system directly.

All judges in Iraq are appointed to office by Saddam Hussein, in his capacity as president.

Key Government Officials

Secretary General of the Ba'ath Party and Chairman of the Revolutionary Command Council	Saddam Hussein Abd al-Majid Al-Tikriti
Vice Chairman, Revolutionary Command Council	General Issat Ibrahim al-Duri
President and Prime Minister	Saddam Hussein Abd al-Majid Al-Tikriti
Vice President and Deputy Prime Minister	Taha Yasin Ramadan
Vice President	Taha Muhyi al-Din Maruf
Deputy Prime Minister	Muhammed Hamsa al-Mikhail Zubaydi
Minister of Culture and Information	Hamad Youssef Hammadi
Minister of Defense	LtGen Sultan Hashim Admad al-Jabburi
Minister of Finances	Ahmad Hussain Khudayer
Minister of Foreign Affairs	Muhammed Said Kasim al-Sahhaf
Minister of Health	Umeed Madhat Mubarak
Minister of Education and Scientific Research	Humam Abd al-Khaliq Abd al-Ghafur
Minister of Housing and Construction	Mahmoud Diyab al-Ahmad
Minister of Interior	Muhammed Ziman Abd-al Razzaq
Minister of Irrigation	Nizar Jumah Ali al Qasir
Minister of Justice	Shabib al-Maki

Minister of Labor and Social Affairs	Latif Nusayyaf Jasim
Minister of Oil	Amir Muhammed Rashid
Minister of Planning	Samal majid Faraj
Minister of Transport and Communications	Ahmad Murdtada Ahmad Khali
Ambassador to the United Nations	Nizar Hamdun

Local Level

Iraq has 18 provinces, known in Arabic as *muhafazat* (plural *muhafazah*). Governors, appointed by the national government, administer these provinces. Councils headed by mayors run Iraq's towns and cities. Each province has a provincial capital. The provinces and their capitals follow:

Province	**Capital**	**Province**	**Capital**
Al Anbar	Ar Ramadi	Baghdad	Baghdad
Al Basrah	Al Basrah	Dahuk	Dahuk
Al Muthanna	As Samawah	Dhi Qar	An Nasiriyah
Al Qadisiyah	Ad Diwaniyah	Diyala	Baqubah
An Najaf	An Najaf	Karbala	Karbala
Arbil	Irbil	Maysan	Al Amarah
As Sulaymaniyah	As Sulaymaniyah	Ninawa	Mosul
At Taímim	Kirkuk	Salah ad Din	Samarra
Babil	Al Hillah	Wasit	Al Kut

Politics

Elections

A presidential referendum is held every 7 years; the last occurred on 15 October 1995. Parliamentary elections are held every 4 years; the last occurred on 27 March 2000. Iraq claims its elections are part of Iraq's wide range of political reforms to establish constitutional legitimacy, but Saddam Hussein and the Ba'ath Party maintain a monopoly on political power in Iraq and election results are concluded prior to voting.

Provinces

Suffrage

Suffrage in Iraq is universal and granted to Iraqi citizens at 18 years of age.

Parties and Pressure Groups

The Arab Socialist Renaissance (Ba'ath) Party seized power in a military coup in 1968. Since that time, the Ba'ath Party has been the sole vehicle for the expression of political power in Iraq.

The Ba'ath Party was founded in Damascus in 1943 by Michel Aflaq, a Lebanese Christian and Salah al Din Bitar, a Syrian intellectual. Its intent was to promote secularism, socialism, and pan-Arab unionism. Students returning from studies in Syria and Lebanon, as well as by Palestinian refugees, reportedly introduced this ideology to Iraq. During much of the 1950s and 1960s, the Ba'ath Party operated in Iraq as a secret political organization. In 1952, the Iraqi wing of the party, formally known as the Iraq Regional Command, was officially created. The Ba'ath Party was invited to join the Iraqi government installed after the 1958 coup that removed Iraq's monarchy, but it gained real power in 1963 after infiltrating the military and conducting a coup.

A nationalist coup removed the Ba'athists from power on 18 November 1963. After splitting with the Syrian wing of the party in 1966 and renewing its influence within the Iraqi Army, the Ba'ath Party reemerged in 1968 to conduct a coup and firmly seize control of Iraq.

The Iraq Command of the Ba'ath Party runs all party activities in Iraq. The Iraq Command consists of party chiefs for the various provincial organizations and other senior members responsible for specific duties such as foreign and worker relations and military affairs. The secretary-general of the Iraq Command of the Ba'ath Party is the chairman of the RCC and Iraq's president.

The Ba'ath Party last held party elections on 17 May 2001. Saddam Hussein was once again affirmed as the head of Ba'ath Party in Iraq; no one could challenge Saddam's authority.

Iraq Regional Command Election Winners, May 2001

Saddam Hussein	Secretary General; Chief, Military Bureau
Izzat Ibrahim	Deputy Secretary General
Taha Yasin Ramadhan	Unidentified Duties
Tariq Aziz	(de facto) Chief, Foreign Relations Bureau

Ali Hasan al-Majid	Chief, Central Workers Bureau; Chief Party Organizations, Salahudin Party Organizations
Mizban Khudr Hadi	Chief, Central Peasants' Bureau
Latif Nusayyif Jasim	Deputy Chief, Military Bureau
Qusay Saddam Hussein	Deputy Chief, Military Bureau
Muhammmad Zimam Abd al-Razzaq	Chief, Tamim and Ninewa Party Organizations
Abd al-Baqi Abd al-Karim Sadun	Chief, Baghdad-Kharq District Party Organizations
Samir Abd al-Aziz al-Najm	Chief, Diyala Party Organizations
Adil Abdallah Mahdi	Chief, Muthanna and Dhi Qar Party Organizations
Aziz Salih Numan al-Khafaji	Chief, Baghdad-Resafah Party Organizations
Yahya Abdullah al-Abudi	Chief, Al Basrah Party Organizations
Uglah Abd Saqir	Chief, Maysan Party Organizations
Rashid Taan Kazim	Chief, Anbar Party Organizations
Fadil Mahmud Gharib	Chief, Babil and Karbala Party Organizations
Muhsin Khudr al-Khafaji	Chief, Najaf and Qadisiyah Party Organizations
Dr. Huda Salih Ammash	Chief, Professional Bureau; Chief, Students and Youth Bureau
Ghazi Hammud al-Ubaydi	Chief, Wasit Party Organizations

The only other party allowed to operate alongside the ruling Ba'ath Party is the National Progressive Front. The Ba'ath party created this organization in 1974 as a venue for non-Ba'ath political participation. However, this party is little more than a façade that allows Saddam Hussein's regime to claim political pluralism exists within Iraq. To legitimize this supposed political pluralism, the interim constitution of 1990 guarantees the formation of political parties, and the RCC in 1991 authorized the existence of non-Ba'athist political parties as well.

A number of groups opposed to Iraq's government exist; however, none of them has a significant presence or representation within areas controlled by the Iraqi regime. The main Kurdish parties, the Patriotic Union of Kurdistan (PUK) and the Kurdish Democratic Party (KDP), operate in the Kurdish Autonomous Zone in northern Iraq outside the control of the Iraqi government, but they concern themselves primarily with holding on to the freedom afforded to them by U.S. enforcement of the northern no-fly zone. A Shi'a opposition group, the Supreme Council for Islamic Resistance in Iraq (SCIRI), is harbored in southwestern Iran by the Tehran regime. Many Iraqi expatriates participate in opposition groups based outside of Iraq in places like the United Kingdom or the United States. However, the ability of these groups to pose a significant challenge to the Iraqi regime is currently a matter of debate.

Foreign Relations

United States

The United States does not have diplomatic relations with Iraq. A U.S. trade embargo severely restricts financial and economic activities with Iraq. Saddam Hussein views the United States as directly responsible for maintaining UN sanctions on Iraq and marshals all propaganda tools at his disposal to undermine U.S. influence in the region.

The U.S. government has officially declared that it intends to overthrow the current Iraqi regime. To this end, the U.S. government passed the Iraqi Liberation Act in 1998 to provide U.S. funding to Iraqi opposition groups. U.S. government interest in hastening Saddam's ouster increased after the 11 September 2001 terrorist attacks on the United States. For example, President George W. Bush mentioned Iraq as a member of an axis of evil that is dedicated to weapons of mass destruction production during his January 2002 State of the Union address. Also in 2002, the Bush administration indicated it is considering a military campaign to replace the regime in Baghdad with one that will not threaten the international community.

Bordering Countries

Jordan. Jordan refused to join the Coalition against Iraq during the 1990-91 Gulf War because Amman relies heavily on Baghdad for oil supplies and has important economic ties with its eastern neighbor. Iraq maintained close relations, both economic and political, with Jordan following the 1990-91 Gulf War for this reason. However, in 1995, relations between the two countries soured following the defection of Saddam Hussein's sons-in-law, but Jordanian King Hussein maintained influence with Saddam Hussein. After King Hussein's death in February 1999, Hussein's successor and son King Abdullah II sought closer relations with the West, a move that has strained the relations between Amman and Bagdad. However, Jordan cannot forsake its ties to Iraq without risking economic upheaval and internal unrest.

Iraq has used its commercial ties to Jordan as a means to circumvent UN sanctions. Spare parts and goods are smuggled through their common border, and Iraq has established front companies in Jordan to purchase goods for Iraqi consumption. The Jordanian government cooperates with UN efforts to prevent such smuggling, but Jordanians are constrained by resource limitations.

Syria. Although there have been periods of amity between Iraq and the rival Ba'ath government in Syria, relations have been characteristically hostile. Relations began to seriously deteriorate at the end of 1980 following the outbreak of the war with Iran. In April 1982, Syria closed its borders with Iraq, cutting off the flow of Iraqi oil through the pipeline that traversed Syrian territory to ports on the Mediterranean Sea. Syria was a member of the U.S.-led coalition that liberated Kuwait in the 1990-91 Gulf War; a Syrian Armor Division and a Syrian Special Forces Regiment were part of Joint Forces Command North. Syria re-opened its border with Iraq in summer 1997 following several visits by non-official Iraqi delegations. The long-standing personal feud between Syrian ruler Hafiz al Asad and Saddam Hussein, coupled with Syria's desire to maintain good relations with other Arab countries in the region, prevented the re-establishment of formal relations between the two countries.

After Asad's death in June 2000, the Iraqi and Syrian regimes began to increase commercial and economic cooperation significantly. Various sources have indicated Syria assists Iraq in exporting oil in direct violation of UN sanctions as well as importing spare parts and supplies for the Iraqi military. However, the political relationship between Baghdad and Damascus remains cool.

Iran. Iraq's history of conflict with Iran dates back to Babylonian times (500 BC). Most recently, the two countries engaged in border clashes for many years and revived the dormant Shatt al-Arab waterway dispute in 1979. Iraq claimed the 200-kilometer channel up to the Iranian shore as its territory, while Iran insisted that the middle of the waterway was the official border negotiated in 1975. The Iraqis, especially the Ba'ath leadership, regarded the 1975 delineation as merely a truce, not a definitive settlement. The Iraqis also perceived revolutionary Iran's Islamic agenda as threatening. Other conflicts contributing to the outbreak of hostilities ranged from centuries-old Sunni versus Shi'a and Arab versus Persian religious and ethnic disputes, to a personal animosity between Saddam Hussein and the Ayatollah Khomeini. Above all, Iraq launched the war to consolidate its rising power in the Arab world and replace Iran as the dominant Arabian Gulf state. The war lasted from 1980 to 1988, and included the employment of chemical weapons and short-range ballistic missiles (SRBMs) by both sides. Both countries agreed to end the war following UN mediation in 1988. Since that time, Iranian-Iraqi relations have been strained, and the nations regard each other with mutual distrust and suspicion. Both countries harbor and support insurgent groups that are active in the other country; Iraq supports the Mujahedin-e-Khalq (MEK), while Iran supports the Supreme Council for Islamic Revolution in Iraq (SCIRI). Iran views Iraq as the major threat to its regional security, and its armed forces are positioned to defend against Iraqi aggression. Iraq still views Iran as the major barrier to a dominant Iraqi position in the Arabian Gulf. Historic religious, ethnic, and political differences will continue to separate the two countries.

Turkey. Iraq and Turkey have had traditionally close economic and political ties. Before the 1990-91 Gulf War, Turkey served as an important transshipment point for both Iraqi oil exports and its commodity imports. A pipeline transported oil from the northern oil fields of Iraq through Turkey to the Mediterranean Sea. Trucks carrying a variety of European manufactured goods used Turkish highways to bring imports to Iraq. There was also trade between Turkey and Iraq, the former selling Iraq small arms, produce, and textiles. In addition, Iraq and Turkey cooperated in suppressing Kurdish Workers' Party (PKK) guerrilla activities in their common border area. During the Iran-Iraq War, the Turkish government continued to pursue a careful policy of neutrality, fearing that a victory for either side would upset the political balance in the Middle East. Iraq's invasion of Kuwait in 1990 caused Turkey to side with the international community in condemning Iraq's actions. In 1991, the UN conducted Operation PROVIDE COMFORT from Turkey to provide humanitarian relief to the Kurdish refugees fleeing Saddam Hussein's suppression of the Kurdish uprising in northern Iraq. Operation NORTHERN WATCH, the patrolling of the "no-fly zone" above the 36th parallel, is currently based at Incirlik, Turkey, although the Turkish government maintains that the no-fly zone has caused a power vacuum in Kurdish-held northern Iraq that has allowed Turkish Kurd separatists to establish themselves there. Turkey has undertaken several military operations across the border into Iraqi territory since the 1990-91 Gulf War to destroy PKK insurgent bases in Kurdish-held northern Iraq. Baghdad has not responded to these incursions and maintains defensive lines opposite the Kurdish-held portions of northern Iraq. While UN sanctions have curtailed much of the economic activity that passed across the Iraq-Turkey border, Iraq and Turkey currently engage in shipping petroleum products into Turkey through the border town of Zakho, in violation of sanctions.

Kuwait. As one pretext for his invasion of Kuwait in 1990, Saddam Hussein revived a long-standing Iraqi claim to the whole of Kuwait based on Ottoman boundaries. Ottoman Turkey exercised a tenuous sov-

ereignty over Kuwait in the late 19th century, but the area passed under British protection in 1899. In 1932, Iraq informally confirmed its border with Kuwait, which had previously been demarcated by the British. In 1961, after Kuwait's independence and the withdrawal of British troops, Iraq reasserted its claim to the emirate based on the Ottomans' having attached it to Al Basrah Province. Only British military intervention defused the situation. The invasion of Kuwait in 1990 was not only a result of Iraqi historic claims to Kuwait — the high costs of the Iran-Iraq War had caused Saddam Hussein to go into debt to many of his oil-rich Arab neighbors, Kuwait among them. Possession of Kuwait offered not only relief from the debt owed to the Kuwaiti al-Sabah family, but also access to Kuwait's oil wealth. In addition, because Iraq only has a few ports that provide access to the northern Arabian Gulf, the possession of Kuwait offered an opportunity to increase oil export and shipping capacities through the Arabian Gulf from Kuwaiti ports. The Iraqis accused Kuwait of conspiring to reduce Iraqi oil revenues by producing more oil than allowed by Kuwait's OPEC quota and of slant-drilling into the Iraqi portion of the Rumaylah oilfield that straddles the Iraq-Kuwait border. The rapid Iraqi invasion of Kuwait in 1990 began a period of harsh oppression for Kuwait's population, lasting several months. The forcible expulsion of Iraqi forces from Kuwait in 1991 resulted in the institution of UN sanctions against Iraq and the establishment the United Nations in Kuwait Observer Mission (UNIKOM), which monitors the UN-mandated demilitarized zone along the Iraq-Kuwait border. The UN has demanded that Iraq return all Kuwaiti military equipment stolen by Iraq and return or account for all Kuwaiti prisoners of war taken by the Iraqis. Iraq has accomplished neither of these actions.

Saudi Arabia. While the Saudis financially supported Iraq during the Iran-Iraq War, the threat posed by Iraq to regional security in general and to the Saudi regime specifically during the 1990-91 Gulf War greatly concerned the al-Saud family. As a result, the Saudi government entered into close political and military ties with the United States. Iraq has not forgotten Saudi Arabia's contribution to its defeat in 1991, and

the Saudis remain strongly allied with the United States for military security. However, due to the effect of sanctions on Iraq, the Saudi government is less inclined to believe Iraq is an immediate threat to Saudi national security.

Other Countries

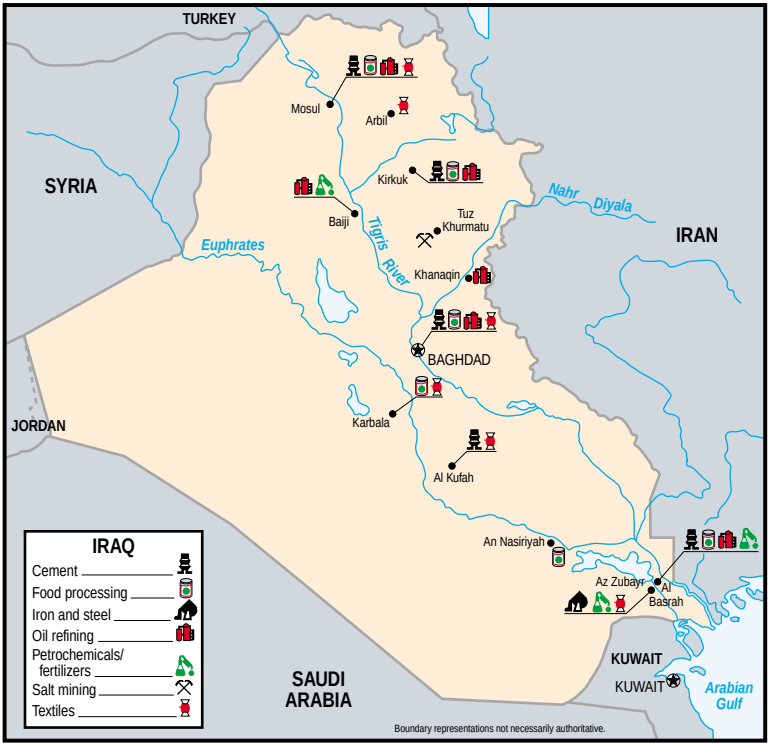
Iraq maintains relatively good relations with France, China, and Russia – all three major suppliers of arms to Iraq in the past. Iraq is in debt to France and Russia for large amounts of money, and the French and Russians anticipate the end of UN sanctions so Iraq can begin to repay its loans. France, China, and Russia also seek to improve their influence in the region by maintaining relations with Iraq. Russia in particular stepped to the forefront as an Iraqi patron following the October-November 1997 standoff with the UN over weapons inspections. Russia offered a diplomatic solution to the Iraqis in return for Russian advocacy in the UNSC; Iraq, eager for an end to sanctions, accepted. Russia and Iraq were diplomatically bound more tightly than ever, up until 2001, when Russia's desire to maintain strong ties to the United States caused Moscow to pressure Baghdad to cooperate with the UN. This situation has not seriously affected Iraqi commercial ties with Russia yet, however; Iraq awards a significant number of commercial contracts to Russia under the Oil-for-Food program, and China and France benefit from this program as well.

ECONOMY

The Ba'athist regime engages in extensive central planning and management of industrial production and foreign trade, while leaving some small-scale industry and services and most agriculture to private enterprise. Oil dominates the economy, providing 95 percent of foreign exchange earnings. In the 1980s, financial problems caused by massive expenditures in the 8-year war with Iran and damage to oil export facilities by Iran led the government to implement austerity measures, borrow heavily, and later reschedule foreign debt payments. Iraq suffered eco-

nomic losses of at least US$100 billion from the Iran-Iraq War. After the end of hostilities in 1988, oil exports gradually increased with the construction of new pipelines and restoration of damaged facilities. Agricultural development remained hampered by labor shortages, salination, and dislocations caused by previous land reform and collectivization programs. The industrial sector, although accorded priority by the government, was also under financial constraints. Iraq's seizure of Kuwait in August 1990, subsequent international economic embargoes, and military action by an international coalition beginning in January 1991 drastically changed the economy. Damaged industrial and transportation facilities have been partially restored. Shortages of spare parts continue. In 1994 and 1995, living standards deteriorated further and consumer prices more than doubled. The UN-sponsored economic embargo reduced exports and imports and contributed to the sharp rise in prices.

In December 1996 the UN implemented the Oil-For-Food (OFF) program to ease the suffering of the Iraqi population. This plan initially allowed Iraq to sell US$2 billion of oil every 6 months. In 1999, the UN removed this sales ceiling on Iraqi oil exports. Proceeds from these oil sales are placed in a UN escrow account, which theoretically allows the UN to restrict the use of these funds to humanitarian purposes. However, the Iraqi government demanded and won the ability to implement humanitarian measures in central and southern Iraq. The money disbursed by the UN for these regions goes to the Iraqi government, which funds regime activities, especially those related to the military and security forces. The UN administers the disbursement of OFF money to Kurdish-controlled northern Iraq, which has resulted in a vastly improved humanitarian situation in those areas. Despite the OFF program, the rest of Iraq's population continued to suffer due to Saddam Hussein's abuse of the system until proceeds from smuggling began to rise in 1997. As a result of these smuggling efforts, the suffering of Iraq's citizens has slowly eased. However, Saddam's misuse of the OFF program still prevents the complete recovery of the civilian sector, which suffers from food rationing and limited medical care.



Major Industries

The Iraqi regime is involved in extensive smuggling operations of various goods into and out of Iraq, and the money obtained in this manner is used to fund Saddam Hussein's various endeavors. Baghdad's smuggling operations are conducted through Iranian waters in the Arabian Gulf and overland across Iraq's borders with Turkey, Syria, and Jordan. Petroleum product smuggling alone brings in more than US$1 billion per year for Saddam Hussein's use.

The Iraqi government has been unwilling to abide by UN resolutions; therefore, economic sanctions remain. However, in May 2002, the UN implemented a Goods Review List to more effectively target sanctions against prohibited items. The OFF program continues, with US$42.9 billion of contracts having been submitted to the UN as of April 2002.

Statistics

GDP	
Purchasing Power Parity	US$57 billion (2000 est.)
Real Growth Rate	15% (2000 est.)
Per Capita	US$2,500 (2000 est.)
GDP Composition by Sector	
Agriculture	6%
Industry	13%
Services	81%
Inflation Rate (consumer prices)	100% (2000 est.)
Labor Force	4.4 million (1989)
By Occupation	
Services	48%
Agriculture	30%
Industry	22%

[NOTE: Severe labor shortage; expatriate labor force was about 1,600,000 (July 1990); since then, it has declined substantially.]

Industries	Petroleum, chemicals, textiles, construction materials, food processing
Electricity	
Capacity	7,170,000 kW
Production	29.42 billion kWh
Consumption per capita	1,172 kWh (1999)
Agriculture	Wheat, barley, rice, vegetables, dates, other fruit, cotton; cattle, sheep

Exports	US$21,800,000,000 (2000 est.)
Commodities	Crude oil and refined products, fertilizer, sulfur
Partners	Russia, France, Switzerland, China (2000)
Imports	US$13,800,000,000
Commodities	Manufactures, food, medicine
Partners	Egypt, Russia, France, Vietnam (2000)
External Debt	US$139 billion (2000 est.)

Services

Half of Iraq's population obtains water directly from surface sources such as rivers, reservoirs, irrigation canals, drainage ditches, and open wells. The remaining half depends on piped and bottled water. War interrupted urban water services. Although hasty repairs were made during and after the Gulf War, permanent repairs to many systems await the lifting of the UN economic embargo.

ARMED FORCES

Organization

The Iraqi military, although significantly degraded as a result of the Gulf War, remains one of the largest and strongest in the Middle East. Since then it has been rebuilding its capabilities, but has been stymied by the effects of a UN embargo imposing serious limits on trade, especially in oil. With little effective income being generated, and few willing suppliers, Saddam Hussein's ability to buy new weapons systems or spare parts for his older systems has been significantly hampered. Iraq has circumvented UN controls by smuggling equipment and spare parts, although the extent of this illegal trade is unknown. It is also rebuilding its conventional military industry, since it is not prevented from doing so by the terms of the cease-fire.

Significant reconstruction activity has been observed at more than two dozen military industrial sites, and several hundred buildings have been at least partially repaired. Iraq has reportedly resumed assembly of T-72 tanks, artillery, short-range missiles, ammunition, and spare parts. As long as sanctions remain, however, production will likely remain limited.

Nevertheless, the Iraqis have largely rebuilt and reorganized their armed forces since the end of the Gulf War, particularly the Republican Guards and Regular Army. Their overriding goal has been to maintain regime security—a function these forces have been particularly successful at achieving. Emphasis has been on quality rather than quantity by maximizing remaining armored and mechanized equipment. The ground forces have become smaller, less infantry-intensive. In addition, helicopters may be more important to Iraqi operational planning, since their numbers were left largely intact at the end of the Gulf War. Helicopters were heavily used to counter both the Kurdish and Shi'a insurgencies.

The Iraqis have been less successful reconstituting their air force, about half of which was lost during the Gulf War. Limits imposed on fixed-wing activity after the war, including the imposition of no-fly zones, seriously hampered pilot training and air force activity. A return to training and normal air force routine in 1992 was accompanied by restoring and rebuilding some air bases destroyed during the war. The air defense command and control network was damaged during the Gulf War. Since then it has been largely reconstituted, although the overall air defense system is hampered by old equipment, few spare parts, and inadequate maintenance.

Most of the Iraqi navy was destroyed during the Iran-Iraq War and Gulf War. Remaining vessels include a few small craft that are in poor condition. Iraqi access to naval bases remains limited.

The most competent Iraqi force remains the Republican Guards, and to a lesser extent the regular army. Each is highly capable of subduing internal dissent. For the short term, the Republican Guards and regular army lack the ability to engage in sustained, high intensity combat due to poor equipment, poor logistical support, poor maintenance, and an overall shortage of

spare parts. Morale and discipline, especially within the regular forces, are considered lacking. A lack of soldier confidence after their decisive defeat by the U.S.-led coalition in 1991 might also limit military effectiveness. Over the long term, however, Iraqi rebuilding efforts will strengthen the military, especially if sanctions are lifted and inspections terminated.

National Policy

Iraqi military policy is designed to enable Baghdad to defend the regime and fulfill its national goals of being the dominant power in the Gulf and the leader among Arab countries. The Iraqi government believes that it can achieve these goals only with a strong, well-equipped, and modern military. The Iraqi government intends to maintain a force of sufficient capability to contribute to the attainment of its foreign policy objectives through shows of force and offensive operations, maintaining the rule of the current regime, defending the homeland from external attack, and conducting counterinsurgency operations. The maintenance of such a force could contribute to foreign policy objectives solely by its existence. Iraq's military policy will be implemented by using conventional and unconventional forces and weapons. All national assets necessary (money, manpower, infrastructure, natural resources) are devoted to that end. Iraq will buy arms and technology from any source it can. Iraq also believes that it must develop its indigenous capability to produce arms, particularly weapons of mass destruction to avoid depending on outside sources. Iraq has a far-reaching program to train Iraqis in the necessary technical fields and to finance research programs as well. The military will be used as it was during its invasion of Kuwait and the October 1994 movement of forces towards Kuwait's border, as a tool to enhance Iraqi prestige and claims to leadership, as well as to encourage the lifting of sanctions.

After regime security, Iraqi military policy is to ensure its armed forces are prepared for offensive military operations against its regional neighbors and to conduct other military actions (such as missile attacks) to carry out Iraqi policy further afield. To overcome losses from the Gulf War, Iraq will attempt to acquire new armor, artillery, advanced fighters,

and air defense and C3 equipment. Baghdad will also attempt to reestablish its programs for WMD development and other domestic arms production elements. Iraq will therefore maintain its armed forces as well trained and equipped as possible.

Doctrine

Iraqi military doctrine combines elements of British and Soviet military doctrine modified by Iraq's combat experience. Although Iraqi doctrine embraces modern concepts of maneuver, coordination of combined arms, flexibility, defense-in-depth, and counteroffensive strikes, a disparity exists between theory and execution on the battlefield. The Iraqi military proved itself unable to adapt to changing battlefield conditions and cope with the high tempo, deep battle of fire and maneuver waged by Western armies. Moreover, the relative lack of action from the Iraqi air force during the Gulf War demonstrated another characteristic of its doctrine — military conservatism. In some situations, the preservation of assets for political, internal security, or longer-term objectives overrides military considerations.

Some of the deficiencies evident during the 1991 fighting were purely technical, such as the lack of an effective fire direction system to exploit its long-range artillery attack capabilities. More challenges, however, are the limits imposed on officer initiative and cooperation. Iraq's combat effectiveness will be hampered by morale factors, especially when confronting a technologically superior and highly motivated enemy.

Iraq's basic doctrine is unlikely to change. With better training, incorporation of Gulf War "lessons learned," and equipment enhancements, Iraqi forces will become more capable and narrow the gap between the theory and practice of doctrine. That, together with Iraq's ability to deploy relatively large forces, will enable Iraq's military, especially the heavy divisions of the Republican Guard Force Command (RGFC) and the army, to provide a formidable challenge to any regional enemy force.

Strategy

The RGFC heavy divisions, potentially augmented by special forces, will lead any major offensive. Regular army supports attacks. Iraq usually conducts offensive operations in two columns of mechanized and armored forces to penetrate enemy forward lines to accomplish a deep envelopment. Special forces or RGFC infantry troops may be air landed to capture specific terrain objectives or critical facilities. Once the enemy is encircled, the attacking units attempt to destroy the forces within the encirclement. Although pursuit operations are taught, they have never been conducted. Attacks, usually beginning in early morning, are preceded by heavy preparatory conventional (and during the Iran-Iraq War, chemical) fires. Once the encircled enemy is defeated, the attacking force is relieved by regular infantry units who assume the forward defensive positions.

Fixed-wing, close-air support (CAS) was rarely employed during the Iran-Iraq War, due mainly to nonexistent air-to-ground communications. In the last years of the war, helicopters were used successfully in a CAS role. Air was generally used to attack preplanned targets such as supply points and personnel replacement depots, and to seal off the battlefield. Both conventional and chemical munitions were employed. Long-range aircraft are used to bomb strategic targets. The Iraqi air force is used conservatively, emphasizing protection of aircraft over mission success.

Iraqi military strategy presupposes the use of regular army conscript forces to man defensive positions along threatened borders. Also, in the wake of an offensive, Iraqi forces will dig in. When switching from an offensive to a defensive posture, most RGFC divisions are likely to be pulled back to form an operational or strategic theater reserve. Their mission will be to counterattack or establish and hold defensive blocking positions on avenues of approach and key terrain. Regular army infantry units will replace the RGFC on the frontlines. As in the Gulf War, regular army heavy forces may also be deployed as an operational or strategic theater reserve force. In this role, they may have an additional mission of screen-

ing for the RGFC and/or counterattacking the enemy prior to commitment of the RGFC divisions to the main counterattack.

Air and air defense doctrine emphasizes the protection of strategic civilian and military sites and ground forces from enemy air attacks. The air defense forces employ SAMs and antiaircraft artillery (AAA), usually in barrage fire, to carry out their mission. Control is highly centralized.

Artillery is a major component of military operations; heavy fires have been used as preparation for offensives, final protective fires, and as a counterattack force. During the Iran-Iraq War, artillery- and air-delivered chemical weapons were used heavily in both defensive and offensive operations.

National Organization

Constitutionally a republic, Iraq is in reality a military dictatorship. Saddam Hussein, president of Iraq, is a field marshal and commander-in-chief of the armed forces. Hussein is also the chairman of the Revolutionary Command Council (RCC), which embodies executive authority and essentially runs the country. All three military services are represented on the council, which appoints ministers responsible for administrative matters, one of which is the minister of defense. It is through this minister, who is also the deputy commander-in-chief of the armed forces, that Hussein decides military issues.

The main military command authority is vested in the chief of the general staff, who also serves as the army commander and is directly subordinate to the defense minister. The navy, air defense force, and air force are organizationally separate arms, but are directly subordinate to the chief of the general staff, and thus the army. The army administratively controls the navy, although it trains its own personnel and is responsible for its equipment. The army is the primary service.

The Iraqi military is composed of a professional officer corps and conscripted enlisted force that serves from 18 to 24 months. A pool of reservists is estimated at up to 650,000 additional men. A force of about

20,000 personnel make up the frontier guards, also known as border guards. They are subordinate to the ministry of the interior. The civilian Ba'athist Party-based popular militias (believed 1 million-strong before the Gulf War) have reportedly been disbanded, as have the 100,000-strong "pro-regime" Kurdish militias. Following the renewed Israeli-Palestinian violence in late 2000, Iraq created the Al Quds (Jerusalem) Volunteer Army in early 2001 to ostensibly liberate Palestine and Jerusalem and defeat the Zionists (Israelis). Iraq reports that this force is made up of 7 million Iraqis divided into 21 divisions. However, it is more likely that this force is propaganda designed to show Iraqi support for the Palestinian cause, has fewer personnel, and is an ineffective fighting force.

Saddam's military authority is backed up by an extensive system of Intelligence and security services. The largest of these is the Special Security Service Organization; it is responsible for Hussein's personal security. It consists of more than 15,000 men, most of whom are Sunni Arabs from Tikrit. It controls the Special Republican Guard or Presidential Guard, which controls access to the presidential palace and key facilities. The Special Republican Guard is the only armed force permitted in Baghdad, and it in turn supervises a special presidential bodyguard unit.

Future

Saddam Hussein will continue to use available resources to maintain his military. Proceeds from the UN food-for-oil sale and petroleum products smuggling will pay for maintaining Iraq's military while UN sanctions last. Once sanctions are lifted, Saddam Hussein will use the revenues from Iraq's return to the oil market to re-equip his military with modern military hardware. Iraq's military doctrine and tactics are unlikely to change, but the overall force will be better trained and smaller than the military that was at Saddam Hussein's disposal during the 1990-91 Gulf War.

Key Defense Personnel

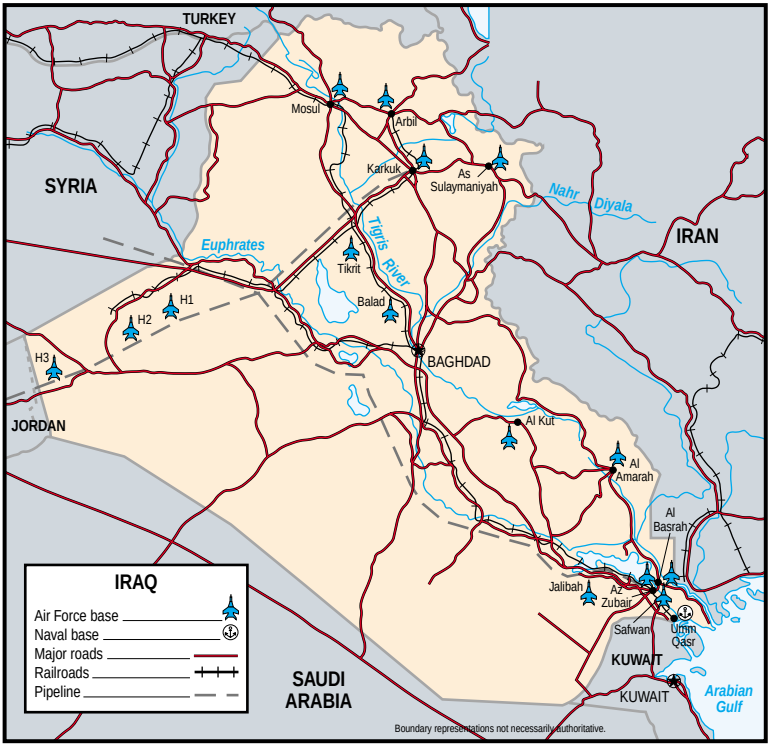
Minister of Defense	Gen Sultan Hashim Ahmad al-Jabburi al-Ta'i
Chief, Armed Forces General Staff and Chief of Staff of the Army	Gen Ibrahim Ahmad al-Sattar Muhammad al-Tikriti
Chief of Staff of the Air Force	Staff LtGen Hamid Raja Shalah al-Tikriti
Commander, Air Defense	Staff LtGen Muzahim Sa'b Hassan al-Tikriti
Commander, Navy and Coastal Defense Forces	LtGen Yahya Taha Huwaysh al-Ani
Commander, Republican Guard Force Command	Staff LtGen Saif al-Din al-Rawi
Director of Military Intelligence	LtGen 'Ayyad Mukhlif Muhammad Umar al-Ujayl
Director of the Iraqi Intelligence Service	LtGen Tahler Jalil Habbash al-Tikriti
Director of General (Internal) Security	Walid Tawfiq al-Nasir

Force Disposition

The Iraqi army is currently deployed to handle internal security rather than external conquest. About 150,000 troops; 900 tanks; 1,000 APCs; and 1,000 artillery pieces from I, II, and V Corps (consisting of 13 divisions, including one Republican Guard and three heavy regular army divisions) are positioned opposite Kurdish positions in the north. About 30,000 troops; 400 tanks; 500 APCs; and 200 artillery pieces from four Republican Guard divisions ring Baghdad, and about 70,000 troops from III and IV Corps (consisting of six divisions, including three heavy regular army divisions) face Shi’a insurgents in the south.

Uniforms and Insignia

The Iraqi army uses a wide variety of uniforms, either indigenously produced or purchased before the 1990-91 Gulf War from countries includ-



Military Installations

ing Pakistan, France, and Great Britain. Regular army troops are mostly issued olive green or light brown utilities, as well as several variants of olive green/light brown field jackets that offer only limited protection from the weather. Another commonly issued item to regular troops is the British-style olive green/light brown “woolly-pully” sweaters. A wide variety of field caps and winter pile caps are used.

Camouflage uniforms are abundant among Republican Guard troops, since many areas of Iraq have foliage. The Republican Guards use vari-

ous patterns, from French four-color desert, to tropical, to European disruptive pattern material (DPM) — not so much for their camouflage effectiveness but for their quality. The Republican Guards also use several indigenously produced, predominantly green, woodlands camouflage patterns. Two dozen different types of camouflage uniforms have been identified, and they are not issued on a unit basis, as is often reported. Some units are equipped entirely in a specific pattern, but this is due to the availability of the uniforms at the time. It is also very com-

Ground Forces Enlisted Rank Insignia	No Insignia Jundi	Jundi Awwal		Naib	Arif
U.S. Equivalent	Basic Private	Private	Private 1st Class	Corporal	Sergeant
Rais Urafa		Naib Dabit			
Staff Sergeant	Sergeant First Class	Master Sergeant	First Sergeant	Command Sergeant Major	Warrant Officer (WO)
Ground Forces Officer Rank Insignia	Mulazim	Mulazim Awwal	Naqib	Ra'id	Muqaddam
U.S. Equivalent	2d Lieutenant	1st Lieutenant	Captain	Major	Lieutenant Colonel
'Aqid	'Amid	Liwa'	Fariq	Fariq Awwal	Muhib
Colonel	Brigadier General	Major General	Lieutenant General	General	General of the Army

Rank Insignia

mon, even in Republican Guards units, to mix shirts, jackets, and trousers of different camouflage patterns, or olive green/light brown garments with camouflage.

Pakistani-made British pattern 58 web gear is widely used. Chest magazine pouches with three magazine pockets and four accessory pockets, in both khaki and olive green, are common, especially among mechanized personnel and tank crewmen, who carry little other equipment. Iraq troops wear U.S. M1-style helmets and carry a wide range of predominantly eastern European protective masks. Iraqi tankers use Russian-style olive green or black coveralls as well as various camouflage and olive green field uniforms. Iraqi tankers also wear an armored crewman patch on the left breast. Russian flame-retardant cloth helmets with integral earphones and throat microphones are also standard issue.

Other than officers' rank, Iraqi field uniforms generally lack insignia. Two types of officers' rank insignia have been observed with field uniforms; the first is gold-colored metal insignia on cloth shoulderboards, while the second, more common type is yellow stenciled rank insignia on cloth shoulderboards.

Iraqi military personnel wear a variety of different colored berets with their field and service uniforms. The black beret is worn most often, although it is specifically intended for use by armor troops. Military policemen wear red berets. Special forces troops wear maroon berets. A variety of other beret colors exist, but what branch of service they represent is unknown. Republican Guards have been known to wear a bright red lanyard, predominantly with their service uniforms but sometimes with field uniforms as well. Other personnel wear solid black and various two-colored lanyards, though their significance is not known; they may identify instructors or cadre. Republican Guard troops wear a red isosceles triangle shoulder patch on the left or both shoulders.

Among Iraqi forces, vehicle markings include hull markings for vehicle registration and turret insignia for unit identification. Colors for these markings include black on white, red on white, black on yellow, or black painted directly on the vehicle's base color. Vehicles marked with a red isosceles triangle, sometimes with a number within, belong to the Republican Guards.

Army

Organization

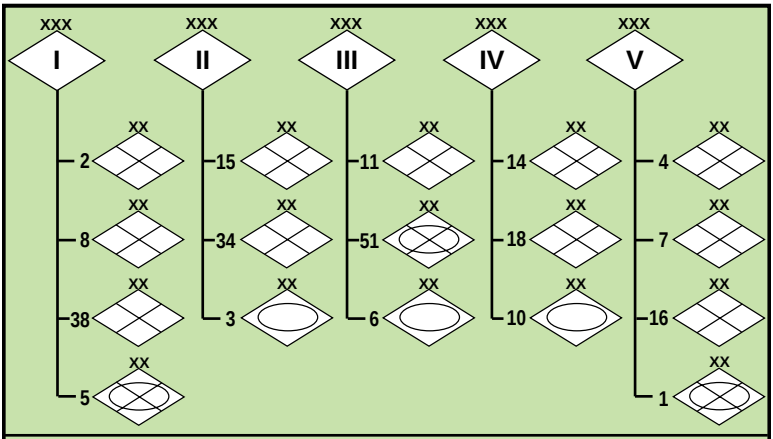
The Iraqi army is responsible for ground operations, airborne ground defense, and joint amphibious missions with the Iraqi navy. Ground-based air defense is a function of the air force. The army and Republican Guards have primarily been deployed in position to handle internal security tasks. Current ground force structure is believed to consist of the following:

- 7 Corps HQ (including 2 Republican Guard Corps)
- 23 Armored/Mechanized/Infantry Divisions consisting of:
  - 3 Regular Army Armored Divisions
  - 3 Regular Army Mechanized Divisions
  - 11 Infantry Divisions
  - 6 Republican Guard Divisions
    (4 Armored/Mechanized, 2 Infantry)
  - 1 Presidential Guard/Special Security Force
  - 2 Special Forces Brigades
  - 5 Commando Brigades

Personnel

Prior to the 1990 Gulf War, Iraq's total mobilized strength was believed to be more than 955,000 men (including 480,000 reserves) organized into 7 to 8 corps, and about 60 to 66 divisions/division equivalents (including Republican Guard divisions). Iraq's catastrophic losses during the war greatly reduced these numbers. Figures

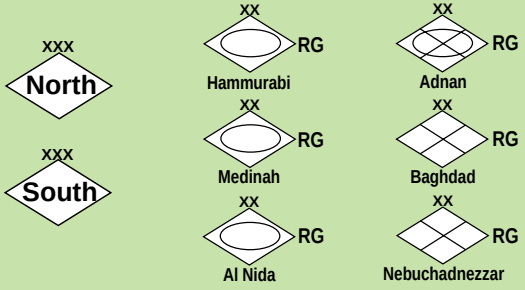
as to actual numbers of units and equipment within the Iraqi force structure vary, as it is difficult to determine exact numbers of equipment lost during the Gulf War. Current army personnel strength is believed to be about 350,000 (including the Republican Guards).



Regular Army Brigades

2nd Infantry Division:	2nd Infantry Brigade, 4th Infantry Brigade, 36th Infantry Brigade
8th Infantry Division:	22nd Infantry Brigade, 44th Infantry Brigade, 48th Infantry Brigade
38th Infantry Division:	130th Infantry Brigade, 847th Infantry Brigade, 848th Infantry Brigade
5th Mechanized Division:	15th Mechanized Brigade, 20th Mechanized Brigade, 26th Armored Brigade
15th Infantry Division:	76th Infantry Brigade, 104th Infantry Brigade, 436th Infantry Brigade
34th Infantry Division:	90th Infantry Brigade, 502nd Infantry Brigade, 504th Infantry Brigade
3rd Armored Division:	6th Armored Brigade, 12th Armored Brigade, 8th Mechanized Brigade
11th Infantry Division:	23rd Infantry Brigade, 45th Infantry Brigade, 47th Infantry Brigade
51st Mechanized Division:	31st Mechanized Brigade, 32nd Mechanized Brigade, 41st Armored Brigade
6th Armored Division:	30th Armored Brigade, 70th Armored Brigade, 25th Mechanized Brigade
14th Infantry Division:	14th Infantry Brigade, 18th Infantry Brigade, 426th Infantry Brigade
18th Infantry Division:	95th Infantry Brigade, 422nd Infantry Brigade, 704th Infantry Brigade
10th Armored Division:	17th Armored Brigade, 42nd Armored Brigade, 25th Mechanized Brigade
4th Infantry Division:	5th Infantry Brigade, 29th Infantry Brigade, 96th Infantry Brigade
7th Infantry Division:	38th Infantry Brigade, 39th Infantry Brigade, 116th Infantry Brigade
16th Infantry Division:	108th Infantry Brigade, 505th Infantry Brigade, 606th Infantry Brigade
1st Mechanized Division:	1st Mechanized Brigade, 27th Mechanized Brigade, 34th Armored Brigade

Regular Army Units



Republican Guard Brigades

Hammurabi RG Armored Division:	8th RG Armored Brigade, 17th RG Armored Brigade, 15th RG Mechanized Brigade
Medinah RG Armored Division:	2nd RG Armored Brigade, 10th RG Armored Brigade, 14th RG Mechanized Brigade
Al Nida Armored Division:	41st RG Armored Brigade, 42nd RG Armored Brigade, 43rd RG Mechanized Brigade
Adnan RG Mechanized Division:	38th RG Mechanized Brigade, 39th RG Mechanized Brigade, 40th RG Armored Brigade
Baghdad RG Infantry Division:	4th RG Infantry Brigade, 5th RG Infantry Brigade, 6th RG Infantry Brigade
Nebuchadnezzar Infantry Division:	19th RG Infantry Brigade, 22nd RG Infantry Brigade, 23rd RG Infantry Brigade
Special Forces Units:	3rd RG Special Forces Brigade, U/I RG Special Forces Brigade

Special Republican Guard Brigades

1st SRG Brigade, 2nd SRG Brigade, 3rd SRG Brigade, 4th SRG Armored Brigade

Surface-to-Surface Missile Brigades

223rd SSM Brigade, 224th SSM Brigade, 225th SSM Brigade, 226th SSM Brigade

Border Guard Brigades

2nd BG Brigade, 17th BG Brigade, various others

Republican Guard Units

Equipment

Current ground force inventory includes the following:

- Approximately 2,200 to 2,300 assorted tanks, including unknown numbers of T-72/72M, T-62, T-54/55, Chinese Type 59/69II, UK Chieftain Mk 3/5 (MEK only).

- Approximately 2,000-2,500 assorted APC/AIFV, including unknown numbers of BTR 152/50/60, OT-62/OT-64, MTLB, M113A1/A2, Chinese YW-531, FR Panhard M-3, and BMP1/2.
- Approximately 1,500 assorted reconnaissance vehicles, including unknown numbers of BRDM-2, and French AML-60/AML-90.
- Approximately 1,750 towed artillery pieces, 230 self propelled (SP) artillery pieces, and 250 MRLs of varied types including US 155-mm M109A1/A2 SP, 152-mm 2S3 SP, 122-mm 2S1 SP, 127-mm ASTROS II, 122-mm BM-21, 122-mm D-30 towed, 152-mm D-20 towed, 155-mm G-5 twd, 130-mm type 46/59-1 (not all inclusive).
- Approximately 5,500 assorted air defense guns, including 57-mm ZSU-57-2 SP and 23-mm ZSU-23-4, as well as towed 57-mm S-60, 37-mm M1939, and 100-mm AAA guns (not all inclusive).
- Unknown numbers of antitank (AT) missiles and AT guns remain in the inventory, possibly including Milan, AT3/4 and HOT, as well as unknown numbers of recoilless rifles including B-11, 106-mm M40A1 recoilless rifle, and 73-mm SPG-9 recoilless rifle.
- Reports suggest that Iraq may have from 100 to 200 hidden SCUD missiles and an unknown number of mobile launchers.
- Iraq's army aviation helicopter assets total some 300 helicopters, including 72 attack helicopters.

The Iraqi ground forces are organized to support internal security missions. The Republican Guard divisions may be fairly well up to full strength, while regular army units may be manned and equipped at lower levels.

Ground Operational Level of War

The Corps

The corps is the principal operational headquarters in the Iraqi army. There is no intermediate headquarters between the corps and the general headquarters (GHQ). Thus, the GHQ must coordinate and control multi-corps operations. At present, there are five regular army corps, each with

assigned territorial areas of operations. Three of these corps currently face Kurdish insurgents in northern Iraq, while the other two corps are located in the southeast where they have been engaged in counterinsurgency operations against Shi'a dissidents. However, as occurred during DESERT STORM, corps can deploy outside their normal territorial operational areas. Subordinate units of an additional ground force command, the RGFC, conduct operations wherever directed. The Iraqi army also includes a separate aviation command that provides support to the corps and the RGFC.

Iraqi corps headquarters is responsible for logistics and administration, as well as combat operations. The corps commander is responsible for his corps' performance. He provides and approves guidance for operational plans and orders, and he directs the combat operations of the corps. The corps chief of staff coordinates all staff section activities. The corps general staff officer for operations is responsible for operational planning, including collection and analysis of intelligence. The corps general staff officer for administration and logistics oversees planning in those areas, and also commands the corps rear administrative area. Special staff officers who either command or supervise organic or attached combat, combat support, and combat service support provide technical input for operational plans.

There is no standard corps composition. Corps compositions are tailored to meet perceived mission requirements, and also reflect the availability of forces. The span of corps headquarters' control has often been excessive, with corps commanders operationally controlling as many as 10 divisions. During DESERT STORM, first echelon corps contained variable numbers of infantry divisions and one or two heavy divisions. Corps may also have varying numbers and types of separate or detached maneuver brigades under their control, including commando and special forces brigades, as well as infantry and independent heavy brigades. Artillery and air defense assets assigned or attached to the corps air defense and air defense artillery commands are also variable, depending on corps missions. Corps are assessed to have an organic, battalion-size

reconnaissance unit. Other assessed organic assets include a signal battalion; chemical defense battalion; and battalion-size field engineer, supply and transport, medical, electrical, and mechanical engineer (maintenance and repair) units. Additional units may be attached or placed under the operational control of the corps as directed by the GHQ. These could include army aviation, antitank, rocket, engineer bridging, and electronic warfare units, as well as additional combat service support assets.

The Iraqi GHQ retains command of some combat, combat support, and combat service support elements, but may place them under the operational control of corps or other headquarters depending on mission requirements. For example, the GHQ may augment corps with rocket artillery, SAMs, and tank transporter units.

Republican Guard Force Command

The RGFC is a separate command composed of two corps. It is the best equipped and trained force in the Iraqi ground forces. It is a self-contained force with its own organic combat, combat support, and combat service support elements. The RGFC is assessed to include four armored/mechanized divisions and two infantry divisions. One or more special forces brigades may also be subordinate to the RGFC. The RGFC has been employed as an elite offensive and counterattack force. Three RGFC heavy divisions conducted the main and major supporting attack on Kuwait in August 1990. Later, six RGFC divisions formed the backbone of theater-level reserves intended to counterattack coalition forces during DESERT STORM.

Army Aviation Command

The primary role of the Army Aviation Command (AAC) is to provide air support to the ground forces. The AAC's major subordinate elements probably include at least four wings, each with subordinate squadrons. AAC helicopter assets conduct ground attack, CAS, armed reconnaissance, troop transport, and counterinsurgency missions, and also have

been used as platforms for forward observers. During the Iraqi invasion of Kuwait, AAC assets were employed in a night, heliborne special forces assault on key facilities in the Kuwaiti capital city. AAC also has some light, armed, fixed-wing aircraft, such as PC-7s, used for ground attack and armed reconnaissance missions. An AAC liaison officer is assigned to corps-level staffs, and an AAC wing may be placed under operational command of a corps. Air support requests probably flow from the battalion level through brigade, division, and corps and then to the AAC wing. Tactical control of AAC aircraft is probably provided by ground-based forward air controllers and airborne controllers.

AAC Aircraft Inventory

	Attack Helos		**Transport/Utility Helos**
30	BO-105	5	AS-61
10	SA-316 Alouette III	40+	Bell 241 ST
20	SA-342 Gazelle	6	BK-117
12	Mi-24/25 HIND	10	Mi-6 HOOK
		80	Mi-8/17 HIP
	Trainer Helos	22	SA-330 Puma
25	MD-500D		**Utility Aircraft**
20	MD-530F	30	PC-7/9

The Offense

Doctrinally, Iraq considers the counterattack as the preferred method of destroying enemy capability and achieving victory. The doctrinal purpose of offensive operations is to destroy a defending enemy in the shortest amount of time, and to occupy his important areas by using fire and maneuver. By doctrine, commanders must seek to gain and hold the initiative, and take offensive action in all phases of combat.

During the Iran-Iraq War of the 1980s and in the 1990 invasion of Kuwait, Iraq demonstrated that it could plan and coordinate corps and multi-corps offensive operations, especially against overmatch7ed foes. Iraq has conducted air assault and amphibious

operations, and has integrated them as elements of a larger offensive operation, as was accomplished during the initial invasion of Kuwait. Iraq reportedly conducted at least one small airborne operation during the war with Iran, however current capabilities in this area are probably quite limited due to aircraft losses. Although reluctant to continue large-scale offensive night operations, Iraqi forces will initiate large-scale combat night operations as was demonstrated in the Iraqi invasion of Kuwait. Doctrinal principles for offensive operations include the following:

- **Intelligence.** Good intelligence is required for planning and is necessary to achieve surprise
- **Surprise.** The goal can be achieved more easily if surprise is obtained, and surprise provides an element of security. Surprise should be achieved in terms of time, place, and weapons
- **Maneuver.** Forces must be able to maneuver swiftly to make use of terrain for cover and concealment.
- **Concentration.** All necessary firepower, troops, and equipment must be concentrated at the proper place and time to provide absolute superiority at the place of attack.
- **Momentum.** Forward momentum must be maintained to the objective. Loss of momentum makes units susceptible to counterattacks.
- **Reserve.** A reserve force is established at all echelons to maintain momentum. Reserves are to be committed to the unit making substantial progress.
- **Cooperation.** There must be unity of command, and units must support units on their flank with overlapping fires.
- **Objective.** Although Iraqi doctrine does not identify this principle, it probably is embodied in the often-employed term “tactical goal.”
- **Morale.** Morale must be developed to the highest extent possible, and the Iraqis believe that realistic training contributes to this goal.
- **Logistics and administrative support.** These are necessary to maintain forward momentum.

The following are among the factors the Iraqis have considered necessary for a successful attack:

- **Timing.**
- **Surprise.**
- **Fire support.** Considered essential, with timing critical. With respect to friendly forces, the most important consideration is the determination of the correct amount of artillery required.
- **Reserves.** These must be available and committed at the right time.
- **Engineer support.** This must be with attack forces to overcome obstacles and clear paths.

The Iraqi invasion of Kuwait in August 1990, although directly applicable to that circumstance, provides insights on elements that might be replicated in a future corps-size offensive operation.

- The attack was initiated at night (0100, 2 August, Kuwait time). Similar timing was used in offensives against the Iranians. The Iraqis expected the heaviest fighting to begin around dawn.
- The main attack was conducted by an RGFC armored division and an RGFC mechanized division with an apparent initial objective of securing a key pass (Al Jahra) northwest of the capital city.
- A supporting attack by an RGFC armored division was conducted to the west of the main attack.
- At 0130, a heliborne assault by special forces troops was conducted against key facilities in the capital city.
- Commando teams made amphibious-borne assaults against key facilities.
- The three attacking heavy divisions linked up at the Al Jahra pass.
- The two divisions of the main attack force then continued their movement to the southeast, and linked up with the special forces in the capital city by 0530, 2 August, having covered about 100 kilometers from attack initiation against limited resistance. Concurrently, the supporting armored division moved south from the Al Jahra pass

area to establish blocking positions on the main avenues of approach into Kuwait from Saudi Arabia.

- By midday on 3 August, leading Iraqi forces began taking up positions near the Kuwait-Saudi Arabia border.
- On 4 August, three RGFC infantry divisions moved into Kuwait to occupy the capital city and to secure primary routes to and from Iraq. By this time, Iraqi regular army divisions were moving to Kuwait. These would subsequently replace RGFC units in defensive positions in Kuwait, thus freeing the elite RGFC units for other missions.

The Defense

Doctrinally, the Iraqis consider the defense to be a stage in preparing for offensive operations. The most important reasons for employing defensive operations are achieving political objectives and waiting for reinforcements; other reasons are providing flank protection, consolidating gains, and preparing for counterattack. By doctrine, Iraqi ground forces should conduct an aggressive defense. Doctrinal principles for defensive operations include the following:

- **Defense in depth.** This is probably the most important defensive principle, and was illustrated during the 1980s war with Iran and during the 1990-91 operations against Coalition forces. This includes echeloning forces, using multiple defensive lines, employing natural and manmade obstacles, and channeling enemy forces. In the Kuwaiti theater in 1990-91, Iraqi ground forces were echeloned in depth with operational-level (corps or corps-equivalent) forces arrayed behind the first-echelon corps, and a theater-level reserve of mainly RGFC divisions positioned at greater depth. Two major defensive belts were constructed employing minefields, wire, and ditches as obstacles. The first belt, covered by platoon- and company-size strongpoints, was intended to delay Coalition forces. The second belt constituted the main defensive line, and was covered by brigade-sized defensive positions. The Iraqi plan was to slow attacking Coalition forces at the first belt, and then trap them in prear-

ranged kill zones between the belts. Any attackers able to breach the second belt/main defensive line were to be counterattacked by division- and corps-level armored reserves.

- **Proper use of reserve.** Each echelon supplies a reserve force to provide rear security as well as for counterattacks.
- **Proper use of terrain.** Consideration of the suitability of terrain for equipment and troops is necessary.
- **Knowledge of the enemy.** Intelligence is required on enemy doctrine, capabilities, strengths, and vulnerabilities.
- **All-around protection.** Prepared positions are to be used.
- **Mutually supporting fires.** Overlapping fields of fire are to be employed.
- **Camouflage and concealment.** Natural and artificial means are to be used.

Doctrinally, the width of a corps defensive sector is 90 to 160 kilometers, and its depth is 50 to 80 kilometers. Historically, however, corps frontages and depths vary from the doctrinal norms. For example, in the 1980s war with Iran, corps frontages ranged from 70 to 220 kilometers, and depths ranged from 40 to 220 kilometers.

Iraqi forces employ two basic types of defenses, static and mobile. Infantry divisions are more likely to be assigned a static defensive role, while armored and mechanized divisions are more likely to be assigned a mobile defense mission. In the case of a corps conducting a static defensive operation, heavy divisions most likely will be positioned to the rear and assigned a counterattack role. Doctrinally, the objective of the static defense is to prevent penetration of the forward main defensive lines, and to defeat any penetrations that do occur with timely counterattacks from the flanks. In the mobile defense, the forward defense elements will attempt to slow or halt the enemy while inflicting losses. This may take the form of a delaying action or a defense in sector employing a fighting withdrawal or defense of a series of defensive positions, or both.

Iraqi doctrine emphasizes that, regardless of the form of defense, the counterattack is key. For major penetrations, corps-level, and if necessary, higher-echelon (e.g., theater) reserves will be committed. To destroy penetrating enemy forces, armor-heavy counterattacks against the flanks of the penetration are preferred, but the Iraqis have also counterattacked against the head of a penetration.

A corps may retain armored or mechanized divisions in reserve. Corps may also have separate armored, infantry, commando, or special forces brigades as reserves, in place of or in addition to one or more heavy divisions. During the 1990-91 Gulf War, Iraq also established corps-size, armor-heavy operational reserves positioned behind the first-echelon corps, and also formed a theater-level reserve.

Tactics: Division and Below

The Iraqi army does not rigidly distinguish the different phases of tactical operations. Consequently, it is difficult to discern an advance from an attack or a defensive operation from a withdrawal. Each phase will contain elements of the other.

Iraqi military doctrine declares the following two types of tactical level operations: mechanized and limited-measures. Mechanized operations involve only mechanized infantry and armored forces; they are conducted in all forms of terrain that permit the passage of military vehicles. Limited-measures operations involve limited numbers of mechanized infantry and armored forces and large formations of regular infantry units; they may be conducted by strategic reserve forces that can also be deployed by sea or air.

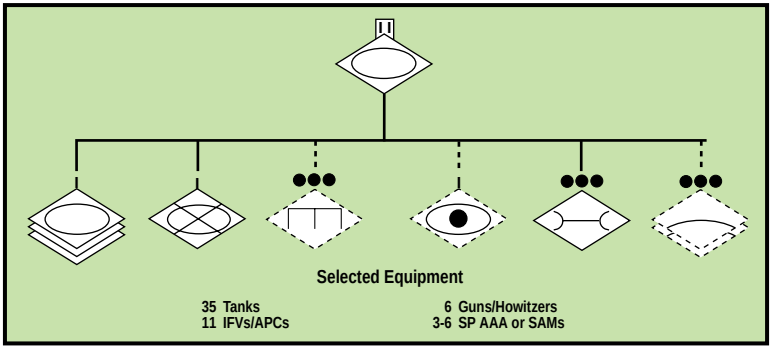
THE OFFENSE

Battle Group Organization

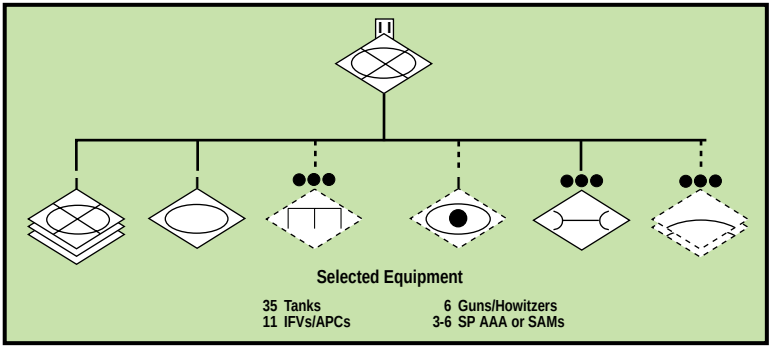
The Iraqi army forms a battle group as its primary offensive maneuver element. A battle group consists of armored, mechanized infantry, or infantry battalions supported by artillery, mortars, air defense, and engi-

neer elements. A battle group should be supported by army aviation helicopters and Iraqi air force ground attack aircraft. The exact composition of a battle group is not fixed, but will vary according to the enemy, nature of the terrain, and mission.

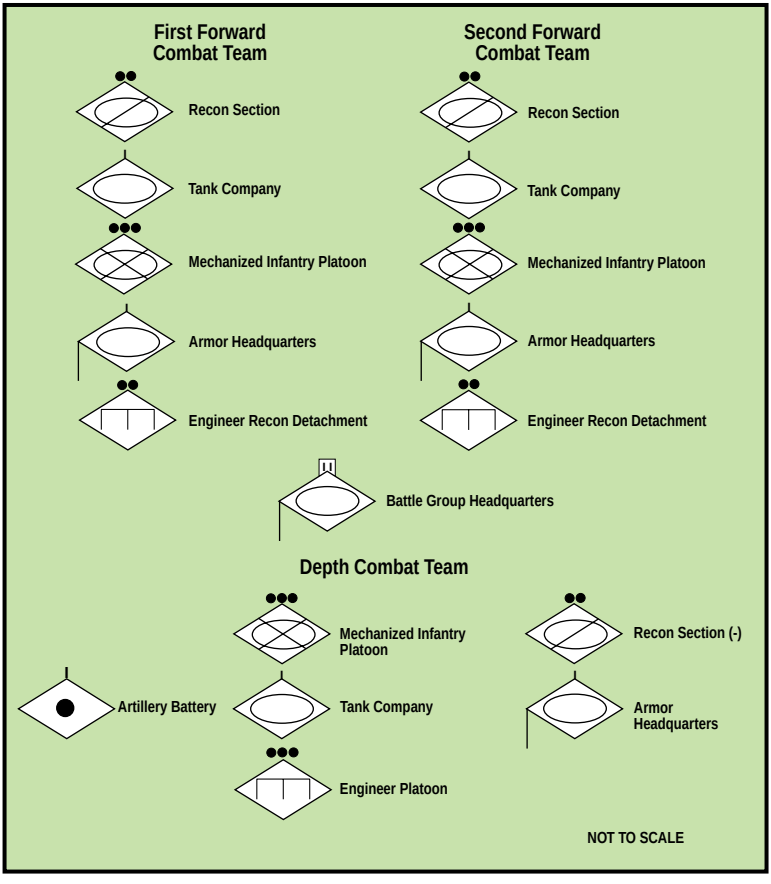
Armored, mechanized infantry, and infantry units within the battle group are organized into combat teams. A combat team usually consists



robable Armor-Heavy Battle Group



Probable Mechanized Infantry-Heavy Battle Group



Combat Teams in an Armor-Heavy Battle Group

of a tank or mechanized infantry company and will have additional elements attached to it depending on the enemy threat, terrain considerations, and assigned mission.

An Iraqi army heavy brigade could form one tank-heavy, one mechanized infantry-heavy, and one pure mechanized infantry battle group. The Iraqis could alternately form one balanced and two mechanized infantry-heavy battle groups from the same heavy brigade. This Iraqi organization also closely parallels the U.S. Army concept of forming battalion task forces and company teams.

Brigade Group

The Iraqi army deploys its units in a British army-style combat formation referred to by the Iraqis as a brigade group. Instead of referring to 1st and 2d echelons of a battle group, the Iraqis use the terms forward groupings and depth groupings. Under this concept, Iraqi brigade-size battle formations are organized into forward battle groups and depth brigade groups (1st and 2d echelon, respectively).

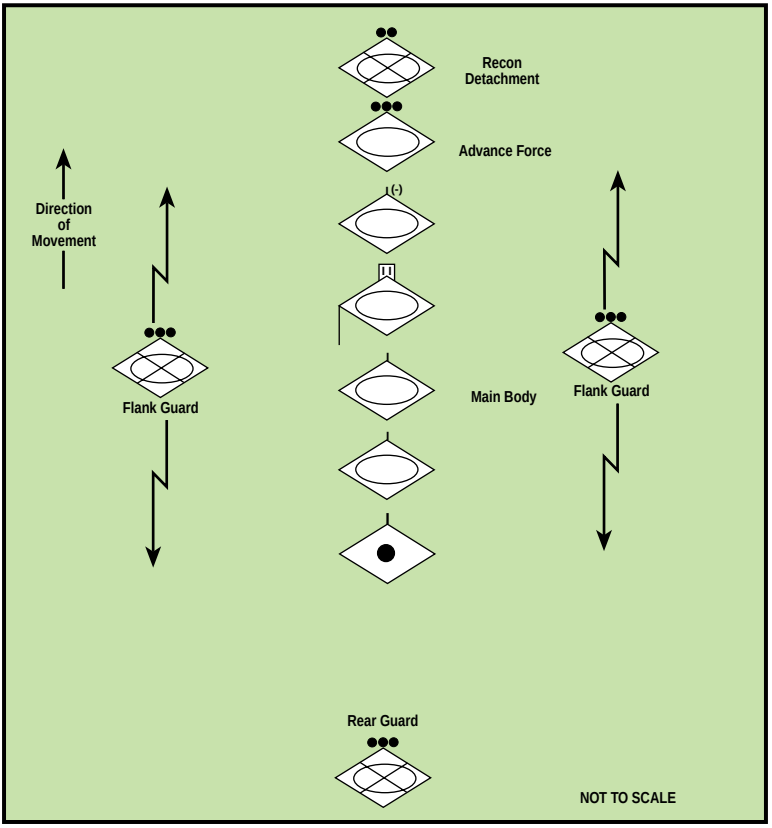
The concepts of forward battle groups and depth battle groups are central to Iraqi offensive tactical maneuver. These groupings form the base of the battle formation. From this base an Iraqi commander establishes his march and attack formations — generating reconnaissance, security, and main body elements. Iraqi Republican Guard battle group in a battle formation employs two forward and one depth combat teams.

March Formation

When in march formation, an Iraqi battle group generates march security and main body elements similar to those deployed by a Russian army regiment. Iraqi units may assume a march formation when conducting an advance, an attack or a pursuit.

Enemy Surveillance

The Iraqi army recognizes the ability of enemy forces to detect movement of armored columns. A battle group on the offensive will be a target for the enemy's ground and air surveillance. The enemy may pick up the heat generated in movement or by night-time driving. To limit detection,



Armor-Heavy Battle Group in March Formation

the Iraqis avoid traveling on elevated terrain or obvious roads, and use non-vital terrain whenever possible. Iraqi army units are instructed to use night-time infrared driving aids only under the following conditions:

- Conducting a march.
- Emergencies.

- In pursuit.
- Deception.

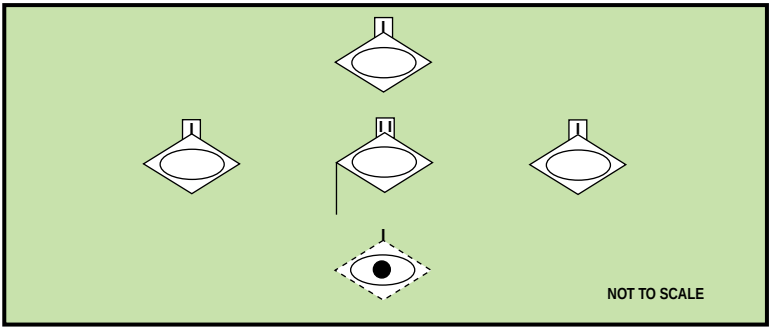
Offensive Maneuver Concepts

The Iraqis describe offensive maneuver as:

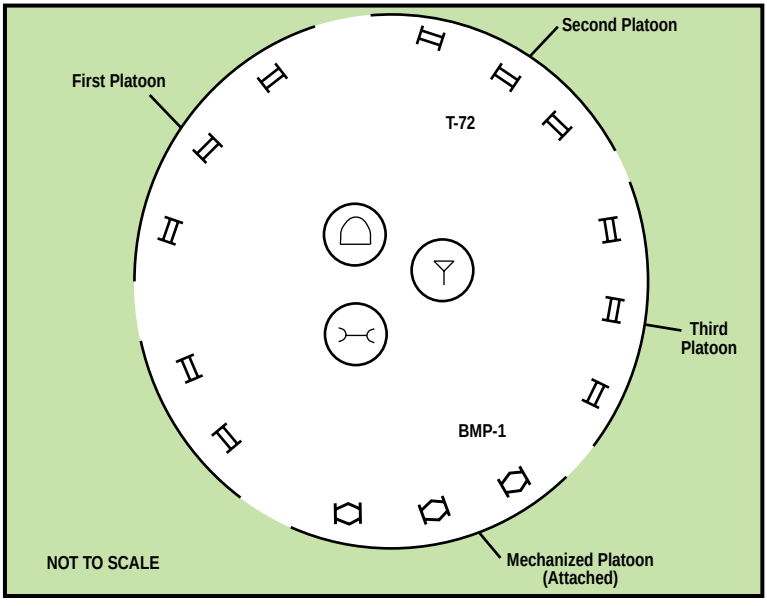
- Rapid advance to contact and pursue an enemy.
- Harassment and destruction of a retreating enemy.
- Assault and destruction of defensive positions.
- Penetration of enemy defenses and exploitation of the results.
- Offensive maneuver begins when a unit receives a mission.

The Iraqi army identifies the following four categories of offensive missions: concentration, harbor, advance, and attack.

- **Concentration.** A concentration is defined as movement to a concentration area conducted in column. Deployment in a concentration area frequently takes a circular form.
- **Harbor.** This mission is defined as movement to shelter conducted in column. Deployment in a harbor area frequently takes a circular/box/



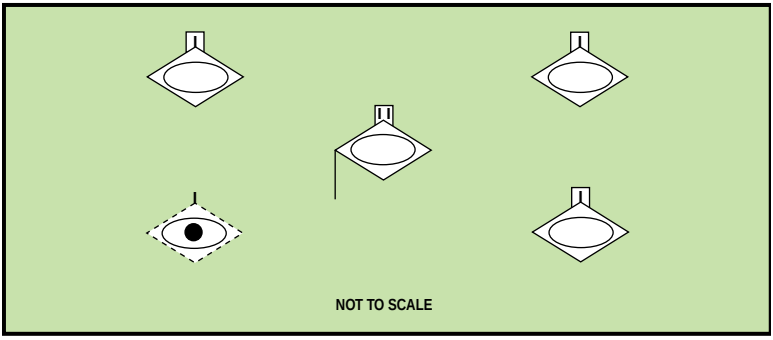
Armor-Heavy Battle Group in Concentration Area



Armor-Heavy Combat Team in Concentration Area

linear form. A battle group will use a harbor for rest, maintenance, and repair.

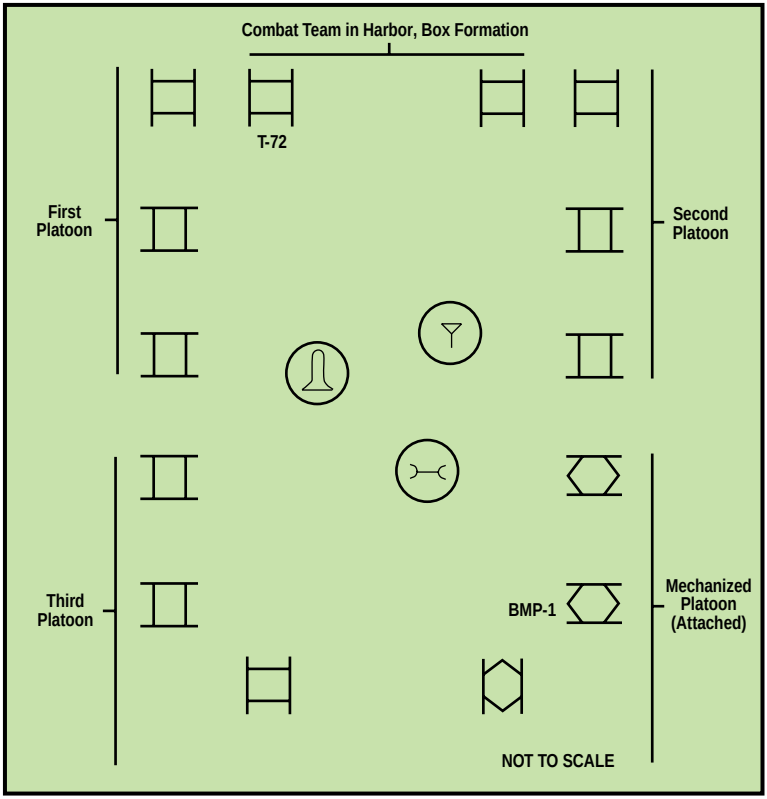
- **Advance.** The three forms of this mission are an advance to make contact, an advance while in contact, and a pursuit. During an advance, a battle group may assume a battle formation with both forward and depth combat teams in march formation; the forward combat teams in battle formation and the depth combat teams in march formation; or both forward and depth combat teams in battle formation.
- **Attack.** The three most important principles for attack at the battle group level are surprise, momentum, and security. An attack can take three forms — a meeting battle, a rapid attack, and a deliberate attack.



rmor-Heavy Battle Group in Harbor

The Iraqi army applies the following standard terms to all battle group level attacks:

- **Meeting Area.** An area where final administrative preparations and task organization of battle groups and combat teams occurs. A meeting area must be located outside of enemy ground observation, hidden from enemy air observation, easy to move through, and, if possible, outside the range of enemy mortars.
- **Forming Up Place (FUP).** A location where units deploy directly before an attack. A formation area permits synchronization by hour for the combat teams' movement forward and passing through the start line. This area is used for issuing final orders, briefings or directions to the combat teams. As with the meeting area, the forming up place should be easy to reach, concealed from enemy ground observation, and have adequate cover to protect from enemy direct fire.
- **Start Line.** An administrative line that forward combat teams cross at H-hour. The line should be easy to distinguish, like a road or line of crops. The start line should lie straight in the direction of movement toward the target and should usually be the forward perimeter for the formation area.



Armor-Heavy Combat Team in Harbor, Box Formation

- **Final Assault Position.** If the tactical situation does not permit the battle group to establish a formation area, the combat team commanders will meet very briefly at a final assault position. This position will be close to the objective and, due to time constraints, probably established by radio or by oral command during the attack. The position should be a point on a line of approach to the target.

Battle Group
Phases of the Meeting Attack

Phase	Element in March	Basic Task	Actions on Contact
Initial Contact	Recon Patrols and Groups	Obtain data on enemy disposition and terrain along main routes of advance.	Bypass enemy, continue to penetrate enemy positions. Determine enemy disposition, particularly nuclear-capable weapon systems. In favorable conditions (or out of necessity, may attack advancing subunits, take prisoners, disorganize/disrupt enemy forces, and destroy enemy nuclear and C3I systems.
	Advance Party	Moves along route of main body to ensure uninterrupted advance of main force overcoming enemy security/reconnaissance forces and obstacles.	Reports enemy contact/disruption. The leading element deploys and attempts to overcome enemy force based on information from the reconnaissance patrols. Main body of advance party will attempt a close envelopment or double envelopment to defeat the enemy unless that force is superior in size. If successful, units will reform and resume march or initiate pursuit. If unsuccessful, will hold positions/block enemy/enemy continue attacking to support the subsequent maneuver and attack of the main body of the parent unit.
Actions of the Main Force	Main Force	Rapid deployment for the attack and defeat of the enemy, generally from the flanks.	Based on information from forward elements, commander maneuvers his forces and attempts to envelop. Subunits march rapidly to assigned sectors and deploy in prebattle/battle formations as needed to assault enemy forces.
Actions of the Main Force	Main Force	Develop the attack into the depths of the enemy rear.	If the enemy is decisively defeated, initiate pursuit, or resume direction of march and overall mission. If the enemy is not defeated, continue to development the attack and hold positions aggressively until division can conduct aggressively until division can conduct its maneuver.

- **Meeting Engagement (Encounter Battle).** When conducting this form of attack, a battle group can initiate the following forms of maneuver:
  - *Leap-frog movements:* Units conduct movement by bounds. During this movement, one or more forward combat teams provide mutual covering fire while other units move forward.
  - *Broad encirclement:* Forward combat teams conduct traversing operations by passing enemy units and leaving them for depth combat teams to handle.
- **Hasty Attack.** This type of attack is conducted with very little preparation time; orders are usually given by radio and maps are used extensively. They demand quick planning, strong artillery fire support, and an ability to deploy units rapidly. This type of attack closely resembles a U.S. Army hasty attack and should not be confused with a meeting engagement.
- **Deliberate Attack.** When conducting this type of attack, a battle group will usually employ the following two forms of maneuver:
  - *Fire and maneuver*: In the fire and maneuver concept, a battle group's subordinate combat teams maneuver both fires and units to best engage the enemy. This type of attack closely resembles a British and U.S. Army deliberate attack.
  - *Frontal attack*: While the term describing this form of attack make it seem to be attrition oriented, it is actually modeled closely to a Russian army attack against a defending enemy from the depth.

The Advance

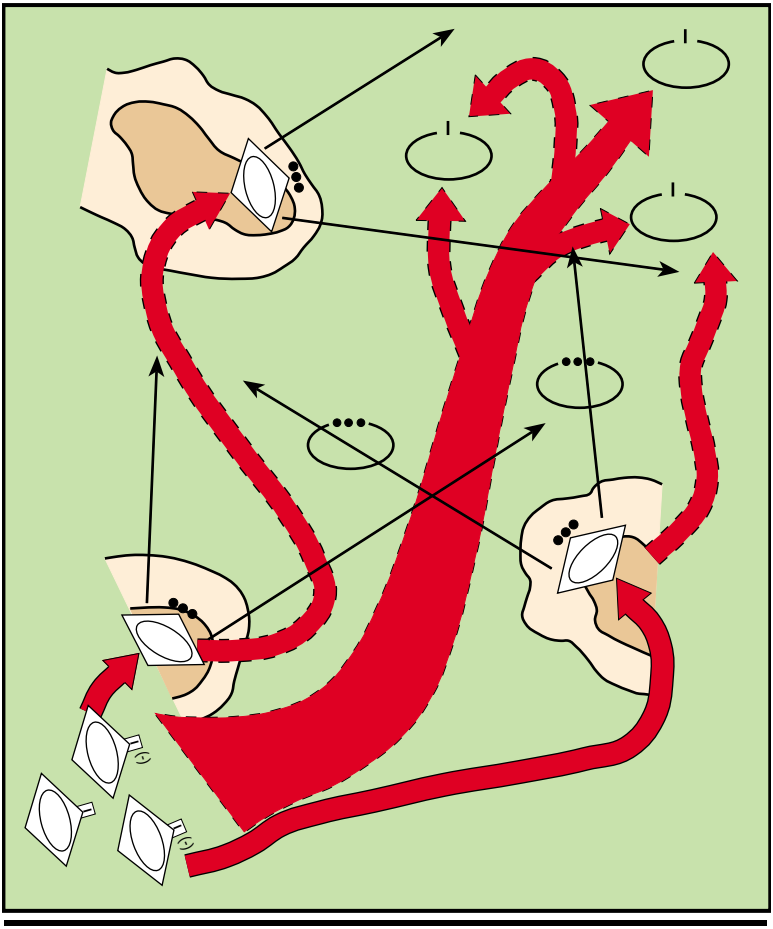
The Iraqi army considers analysis of specific factors essential for the conduct of a successful advance. These factors are:

Terrain. Reconnaissance of area of operations, with detailed coverage of march routes and manmade obstacles.

Enemy. Intelligence collection.

Strength.

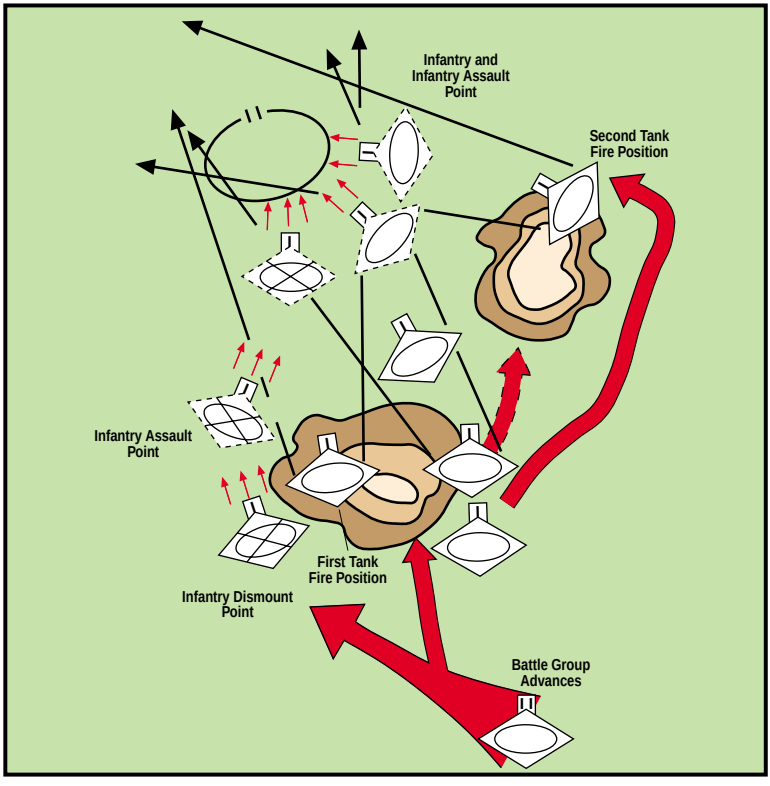
Disposition including reserves.



Armor-Heavy Battle Group Conducting a Deliberate Attack Employing Fire and Maneuver

Capabilities and possible reactions.

Morale.



Armor-Heavy Battle Group Conducting a Deliberate Attack Employing Frontal Attack

Locations of fire arcs and ranges of weapons, mortars, artillery, and machineguns.

Location and distribution of observation and illumination equipment.

Air situation. Determination of friendly air cover and required air defense assets.

Surprise. Deception as to composition of friendly forces and timing, direction, and speed of advance.

Momentum.

Balance. Combat formations organized to best fight the battle.

Resistance. Continuous pressure maintained on enemy formations.

Immediate reactions. High speed reaction to changing combat situation.

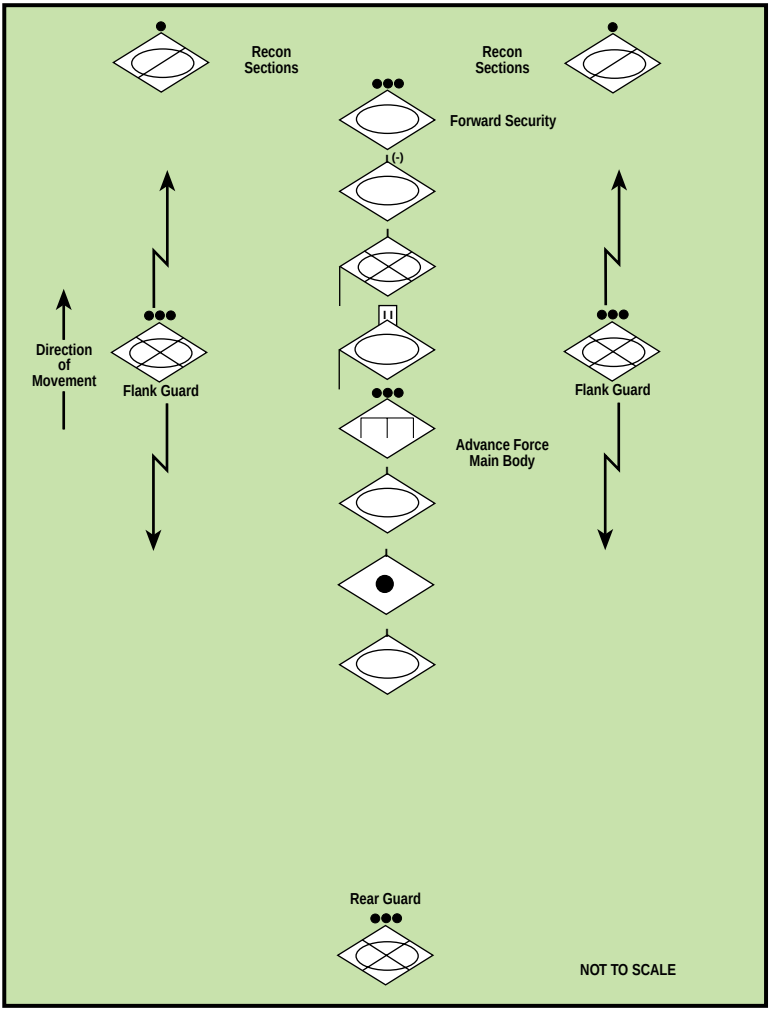
The battle group and higher headquarters elements acquire the necessary information from the following sources:

- Infantry and fixed artillery observation positions.
- Infantry patrols.
- Mobile reconnaissance elements.
- Visual and photo air reconnaissance.
- Radar for locating short-range mortars.
- Radar for locating artillery.
- Electronic, infrared equipment, sound detectors, and picture enhancers.

A forward battle group advances along a wide front usually with two forward combat teams leading whenever the terrain permits room for them to maneuver. This may cause the enemy to spread out its units and may provide better opportunities to bypass positions or attack them quickly.

During an advance, there should be sufficient intervals between combat teams to allow for quick reaction. There should also be ample space for deployment and maneuvers.

A battle group deploys an advance force ahead of the group's main body. An advance force fulfills a march security mission identical to that of a Russian army advance guard. Under the Iraqi concept, a battle group can be deployed as an advance force forward of its parent unit or it can deploy one of its own combat teams forward as an advance force. The organization of an advance force will depend on the terrain and the enemy situation. The Iraqis use the following terms during an advance to assist in maintaining command and control (C2):



Armor-Heavy Battle Group Employed as Advance Force of Brigade

Axis. A general line along whose sides the battle group or combat team travels. The axis may follow roads or paths. It is not necessary to clear the axis of enemy troops unless ordered.

Cleared Roads. Roads that the battle group or combat team must clear of enemy troops. These cleared roads are necessary to supply a wheeled thoroughfare as well as an evacuation route. They can also be used for the rapid transport of individuals and supplies.

Bounds. Tactical intervals that lie on the axis or on its sides and that may be occupied if necessary. Usually given coded names, combat teams should not stop at these points unless ordered. These are not called bounds until they have been cleared — or almost cleared — of enemy troops.

Lines of Decision. These are landmarks that are easily distinguished, such as roads, railroads, or a line of hills. They do not necessarily have any tactical importance, but serve to make units aware of their progress. It is best if they are in corners on the axis and are given coded names.

To keep up the thrust of an advance and to retain the initiative, the battle group may opt to bypass enemy positions. This may be accomplished in two ways:

- A forward battle group bypasses an enemy position, leaving it to the depth battle group to engage the enemy.
- A forward battle group engages an enemy position, allowing the depth battle group to bypass.

When preparing to bypass an enemy position, a battle group commander should decide on several points:

- Should the bypass be accomplished by the forward combat team, the depth combat team, or both?
- How deep behind the enemy position are the combat teams allowed to penetrate?

- If a forward combat team is bypassing an enemy position, should it detach elements to maintain contact with the enemy?

As combat teams within the battle group make contact with defending enemy units, they will initiate a series of four maneuvers:

- **Bypass.**
- **Envelop.** Maneuver around the enemy position to cut off enemy withdrawal or to attack the position from the flank or the rear. It is preferred that other combat teams attack the enemy from the front during an envelopment maneuver.
- **Bracket.** Enveloping the enemy from both sides simultaneously (double envelopment).
- **Turning Movement.** Maneuver conducted around an enemy position. However, instead of attacking another enemy unit farther to the rear, the combat team attacks into the first enemy unit's rear area. This maneuver forces the enemy to abandon its current positions and fight the turning force on unfavorable terrain.

Artillery

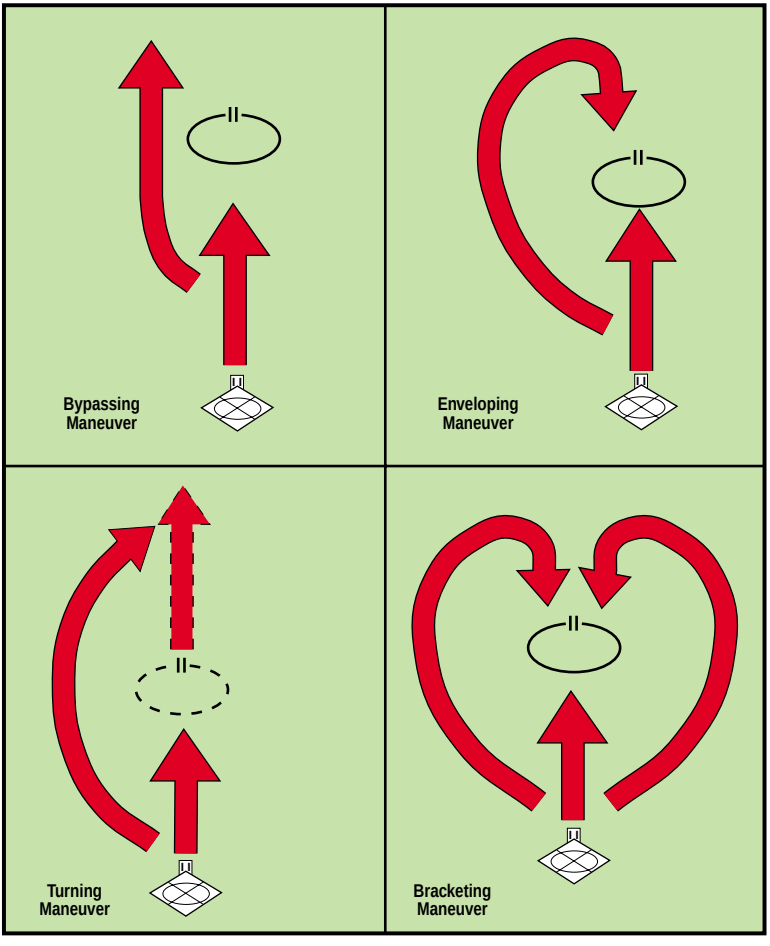
Artillery units attached to a battle group are organized in platoons that will move forward in leap-frog maneuvers or in succession according to the rate of advance. Artillery reconnaissance teams will move with a forward battle group, but are not limited to a specific area.

Mortars should not usually be moved in leap-frog maneuvers or in succession. The mortar carriers should move with the battle group's main body.

Forward artillery observation officers, mobile fire controllers, and forward air controllers should be in the best positions to secure fire support during contact. Usually they move with a forward combat team headquarters.

Reconnaissance elements usually consist of tanks, platoon reconnaissance patrols, and engineering reconnaissance teams. Army air force helicopters may also support the reconnaissance effort.

Every forward combat team will need its own close range reconnaissance to secure detailed information about the terrain and the enemy.



Various Maneuvers

The missions of close range reconnaissance forces during night and day include the following:

- Distinguishing enemy positions and giving an early warning.
- Providing information on the conditions of roads and positions.
- Finding openings in enemy lines and roads around enemy positions.
- Providing information about areas the enemy has abandoned.
- Observing the near flanks.

Engineering reconnaissance teams should usually be collocated with the forward combat teams. They should keep the engineering commander informed about the state of all roads and positions.

Flank guards warn of enemy movement. These units perform this duty either by traveling along roads parallel to those used by the advance force or by monitoring the side approaches.

The composition of the flank guards depends on the enemy threat, the kind of advance under way, and the nature of the area. Flank guards may contain armor, infantry, reconnaissance troops, and antitank detachments. Army air force helicopters may also support the flank guard.

On contact with enemy forces, a battle group's lead elements are expected to bring the enemy under fire, fix the wings of the enemy position, determine his strength, and maneuver to bypass or attack the enemy position.

To conduct an attack, the battle group commander may:

- Order the forward combat team to conduct a rapid attack or a bypass.
- Order the depth combat team to bypass the position or resume the advance.
- Mount a rapid attack using the forward and depth combat teams or other elements.
- Conduct a deliberate attack.

While conducting these maneuvers, reconnaissance elements should locate breach points in the enemy position. Combat teams supporting the

maneuver should also secure the best possible observation point to bring fire on the enemy position or to conduct a supporting maneuver around one or both enemy flanks. During any stage of an advance, a combat team should attempt to surprise the enemy and attack from a unexpected direction. Under these circumstances, it is possible to achieve success out of proportion to the number of units taking part. This surprise maneuver may result in the combat team sweeping through the enemy position directly from the line of approach in a bold and immediate assault.

Rapid Attack

An Iraqi army combat team may initiate a rapid attack in 30 to 60 minutes, a battle group in 60 to 90 minutes. If Iraqi units are well trained, these times may shorten. The Iraqis consider several important factors when conducting a rapid attack. These factors include:

- **Enemy Forces.** Location, strength, and possible reaction to attack.
- **Terrain.** Includes approaches, fire support areas, wing protection areas, obstacles, and possible locations of formation and infantry dismount areas.
- **Time and Distance.** Estimate of probable time for deployment of units.
- **Assault Units.** Tank, mechanized infantry, and infantry units assigned to conduct the main attack. Tanks should provide close-range suppressive fire. Tanks are especially important to the attack when supporting artillery fires have been lifted.
- **Support Fire Units.** Tank, mechanized infantry, and infantry units assigned to provide overwatching fires for the assault units. Firing from hasty security positions, support fire units provide both suppressive and direct fire against enemy positions and antitank weapons until assault units enter the enemy defensive area.
- **Flank Protection Units.** Reconnaissance and possibly tank and mechanized units assigned to protect the flanks of the assault units.

- **Blocking Units.** Tank or mechanized infantry units assigned to envelope the enemy and establish blocking positions to engage enemy forces that attempt to withdraw.
- **Exploitation Units.** Depth combat teams (2d echelon) assigned to continue the attack into the depth of the enemy's defensive position.

When an alert order is issued to conduct a rapid attack, assault units should proceed immediately to the formation area. This area should be on ground that is not vital to the target. If time permits, combat team and platoon commanders in the formation area should make final preparations to acquaint themselves with the terrain on which they will mount the assault.

On receipt of the alert order, flank protection units should move to their positions while the remainder of the battle group maneuvers to cover the assault units.

Helicopters have an important role during a rapid attack. In addition to their normal combat missions, helicopters can:

- Survey the formation and dismount areas.
- Direct the assault units to their formation area.
- Observe the exposed wing and report newly identified enemy positions or units.
- Assist in directing the assault units.

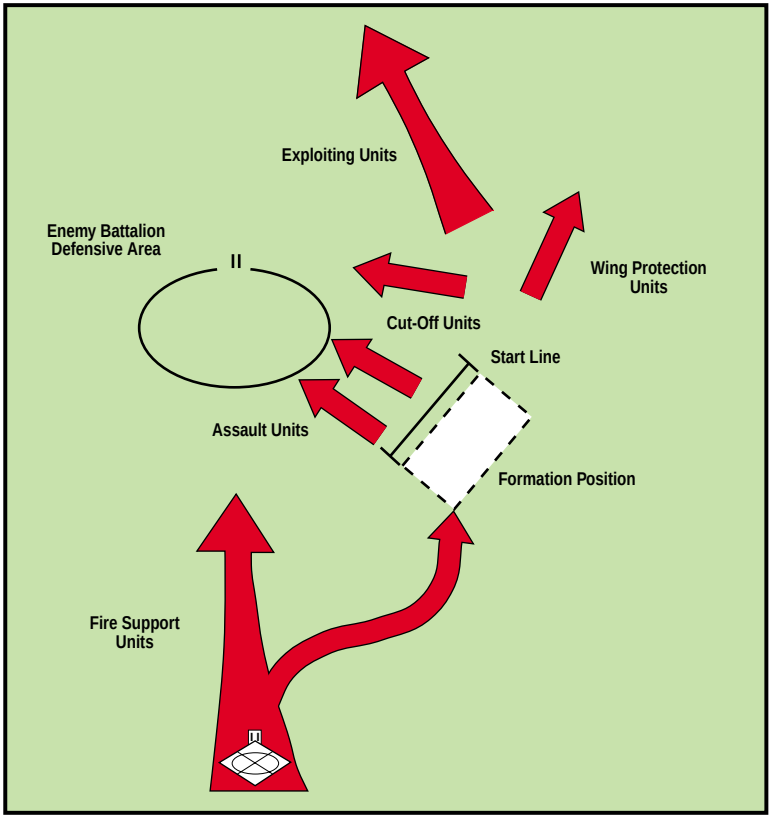
Deliberate Attack

If Iraqi army units making initial contact with an enemy defensive position have not cleared an area suitable for wide maneuvers, a battle group conducting a deliberate attack may compensate for this with heavy supporting fires from tanks, artillery, aircraft, and sometimes ships. This type of attack very closely resembles a Russian army attack against a defending enemy from the depth. Infantry units may be on foot, in APCs or helicopters.

The Iraqi army divides a deliberate attack into five phases:

- **Preparatory Phase.** During this phase, reconnaissances conducted and alert orders are prepared and sent.

- **Deployment Phase.** Used for re-grouping combat teams (if necessary) and for the battle group to move into a formation area.
- **Approach and Assault Phase.** Forward combat teams approach their objective and assault enemy defensive positions.



Mechanized-Heavy Battle Group Deployment for Rapid Attack from the Right Wing

- **Reorganization Phase.** Combat teams reorganize in areas around their targets in order to deter any enemy counterattack. [NOTE: This execution is much closer to the U.S. Army concept of consolidating on the objective and is a clear departure from Russian army tactics.]
- **Exploitation Phase.** Depth combat teams should exploit any enemy weaknesses and destroy any withdrawing enemy units.

In conducting a deliberate attack, a battle group will organize its subordinate combat teams into a battle formation having assault, support fire, wing protection, cut-off, and exploitation units. While these units will be employed in a manner similar to a rapid attack, the combat teams will be better prepared to fight the battle and may have had time to rehearse the attack prior to conducting the actual mission. In addition, other battle groups may be conducting supporting attacks on either flank and independent battalions (tank, artillery, engineer, air defense) from echelons above the battle group may also support the attack.

A battle group may take either direct or indirect approach routes or a combination of the two if sufficient maneuver area exists. The route used will heavily depend on whether the battle group can maneuver to envelope the enemy or if it must conduct a frontal attack.

If the enemy has assumed a positional defense mutually supported by artillery deployed on the flanks and rear, the Iraqis believe it will be difficult for the battle group to take an indirect approach route. The effect of enemy artillery lateral fire would be too great. However, if the enemy force assumes a mobile defense, the opportunity for a battle group to successfully utilize an indirect approach route increases.

In a deliberate attack a battle group may concentrate tanks in cohesive, secondary units. The Iraqi army believes this provides the battle group commander the flexibility to apply his armor strength during every tactical phase of the battle.

The Iraqi army has established the following set of principles for employing armor in a deliberate attack:

- Tanks should closely coordinate all attacks with infantry units to provide fire support from a distance and to protect the flanks.
- Tanks provide the best support for infantry units from behind protective cover. They may move to forward fire positions during the attack to maintain close observation for the infantry they are supporting.
- A number of tanks should accompany infantry units for their fire to be precise throughout the assault, especially when the supporting artillery fire is shifted to targets farther in the enemy rear.
- The majority of the tank force must be freed up as quickly as possible once the assault is through and the battle group re-forms. Some tanks may remain with the infantry on the objective to provide a base of fire against enemy counterattacks.

Pursuit

A battle group is usually too small a force to conduct a pursuit by itself. The pursuit is normally conducted by a corps or an armored or mechanized division or brigade.

In pursuit operations, the frontal pursuit is normally employed, but parallel pursuit may be employed when possible to block enemy escape or reorganization attempts.

When enemy forces retreat in orderly fashion and leave strong forces along the axes of retreat to protect the retreating forces, it is necessary to open these axes while continuing cautious movement. For example, in a corps consisting of two armored divisions and a mechanized division, the force will be divided into three parts. The mechanized division will continue to supplement the defense disposition. One armored division will follow the retreating enemy and one armored division will be in reserve.

The armored or mechanized division commander pursuing a retreating enemy force issues general orders regarding how the division will execute its mission. As an example, a mechanized infantry brigade may fol-

low the retreating enemy on the northern axis while an armored brigade, subordinated to the division commander, will remain in reserve to deal with the unexpected.

An armored or mechanized infantry brigade may conduct a pursuit in the following manner: two battle groups advance on two axes, with a third battle group following in reserve. The brigade could have an attached reconnaissance company from the divisional reconnaissance battalion to augment its reconnaissance platoon. The locations along the axis where the battle group's headquarters will manage the battle are predetermined. Locations are determined by terrain features. In open areas, armor heavy combat teams form the forward groupings; in areas of thick vegetation (such as plantations or mountainous areas), dismounted mechanized infantry or infantry dominate the forward groupings.

Tank Support to Infantry and Mechanized Infantry

During an attack, tanks are expected to destroy enemy tanks and other weapons, maintain momentum and pressure on the enemy, and help defend against enemy counterattacks. Tanks are also the primary weapon used to exploit any success and continue the attack into the depth of the enemy defense.

Tanks should usually move ahead of dismounted infantry. This order may be reversed during the approach or the assault if the tactical situation requires it. Tanks may also move along or parallel to the same axis as the infantry.

If terrain or enemy obstacles prohibit the movement of tanks to the front, the infantry will conduct the assault without tank support. Despite this, the range and precision of tank artillery will be a helpful factor in providing fire support from covered positions in the rear or on the wing. It is important to note that Iraqi army tactical concepts employ tanks in an artillery-type, indirect fire role.

The Iraqi army states that APCs enable infantry to move across the battlefield quickly and with some degree of protection. However, APCs are

not tanks and cannot be used as such. The medium machineguns with which APCs are equipped are for providing close support when the infantry dismount. An APC's armor is to protect only against light weapons and bomb fragments. A basic rule for APCs is that they should not maneuver close to the enemy unless supported by tanks.

Mechanized infantry should dismount from their APCs in four different areas. The decision to dismount in each of these areas is dictated by the density of enemy antitank weapons, available low-lying terrain, and manmade obstacles. These areas are defined as:

- **Distant from the Enemy.** At a suitable distance forward of enemy defensive positions and beyond the range of small arms and light antitank weapons.
- **Close to the Enemy.** Close to an enemy position, but beyond the range of hand grenades and outside the acceptable safety limit of his fire support. If possible, the area should be within assault range and in a vertical line to the enemy position.
- **On the Objective.** Executed only if surprise has been achieved or if the enemy's antitank defenses are weak or effectively suppressed.
- **Beyond the Objective.** Only conducted if the mounted attack succeeds without problems. This dismount area is used primarily by the depth combat teams once they have taken the battle deep into the enemy's defensive position.

When a battle group commander makes his decision as to the dismount area, he will change it if the tactical situation changes. The necessity to change dismount areas will usually happen when the area chosen has come under enemy fire. In this case the only reasonable dismount area may be on or beyond the objective. The question of whether the reserves should dismount depends on the tactical situation. Usually, they should remain mounted until they are committed to combat.

Once the mechanized infantry have dismounted, their APCs can either remain in the dismount area, withdraw to a safe area, establish a security

position to provide supporting fire, or follow the dismounted infantry. If necessary, the APCs move with the infantry into the assault.

Combined Arms Battle

Mechanized Infantry

When conducting combined arms, battle tanks should move in front of APCs when the battle group marches from the formation area to the mechanized infantry dismount area. Artillery and other supporting arms should provide suppressive fire on the enemy position while the infantry dismount is accomplished. Whether employing a rapid or deliberate attack against an enemy defensive position, tanks may take the following actions:

- **Enemy Defending on Open Ground.** When the dismount area is located forward of the objective and in terrain conducive to tank maneuver, APCs should stop between the tanks. As soon as the infantry has dismounted, the tanks should immediately move out with the infantry following.

  If the dismount area is forward of the objective and in terrain that restricts tank maneuver, the infantry should dismount behind the tanks and move through them to attack the target. The tanks should establish a security position from which to bring suppressive fire on the enemy position.

  In both situations, tanks should immediately employ fire and maneuver to best attack and suppress the enemy defenses. Tanks may also be used with cut-off and exploitation units.

- **Enemy Defending on Broken Ground.** No fewer than half of the tanks should accompany the infantry to the target. The other half may be used for maneuvering around the enemy's flanks.

  Wherever the dismount area is located, the infantry should dismount behind the tanks and assault their target by moving through the tanks.

  All tanks should provide maximum suppressive fire while the infantry dismounts.

- **Fighting through the Target:** Tanks provide the greatest support to infantry by destroying enemy positions, tanks, and antitank weapons. Additional support is provided by tanks conducting direct fire to suppress enemy positions during the infantry's advance.

  Tanks accompanying the infantry into the enemy defensive area should move alongside the infantry and not in front of it.

Infantry

When the combined arms battle involves tanks and infantry, the Iraqi army deploys them either on the same or different axes. If maneuvering on the same axis, each combat arm will closely support the other, particularly in a final assault. This is the usual form of deployment. If the enemy defenses are weak or the enemy force is attempting to withdraw, tanks and infantry may maneuver on separate axes. However, this is the least preferred deployment because mutual support will not be possible and the tanks may be exposed and vulnerable.

When maneuvering on the same axis, either tanks or infantry can lead. If the battle group attacks on covered ground or against strong enemy antitank defenses:

- Infantry leads at its normal speed
- Tanks provide fire support from a security position to the rear or side of the chosen axis
- Tanks move from one firing position to the other as quickly as possible without bypassing the infantry

Should the battle group attack on covered ground against weak enemy antitank defenses, tanks use fire and movement in front of or to the side of the infantry. Infantry follows at its normal speed.

A battle group may find it necessary to modify its march order if the conditions outlined above change. Throughout the attack, infantry and tanks may alternately precede each other as the combat situation demands.

During the final assault, tanks should continue their activity as in the case of a mounted attack. Whether or not the tanks accompany the infantry depends on the nature of the terrain and the number and type of enemy obstacles.

Fire Support

All weapons should be coordinated within one fire plan. Artillery and mortars concentrate fire on identified enemy positions on timed schedules. Schedules may be changed to permit forward combat teams to maneuver as close as possible before the supporting fire lifts and shifts to deeper targets. In addition to timed fire, combat teams may call for indirect fire support as they locate new enemy positions.

Deception measures may be taken to deceive the enemy as to when the supporting fire has stopped. This may be achieved by pauses in the fire plan and supporting attacks by other battle groups. Artillery should be deployed far enough forward to provide supporting fire throughout the depth of the enemy's defensive battle formation. The fire plan should include:

- **Preparatory Fire.** Used against known enemy positions, particularly enemy artillery and mortars.
- **Covering Fire.** Employed during the attack
- **Defensive Fire.** Only used to repel an enemy counterattack

A battle group commander may modify his fire plan if the combat situation requires. This will usually be done against newly identified enemy defensive areas.

A third of the ammunition for the attack should be saved as a reserve to hit emergency targets or to provide defensive fire. If more ammunition can be resupplied in a timely manner, the amount held in reserve will be less.

The fire plan should also include mortars. Mortars subordinate to the battle group should be employed against identified targets in the forward area of the enemy's defensive battle formation.

Artillery observers are important for success. The tactical plan, terrain, and the ability to see dictate the best deployment for observers. In a deliberate attack, observers should be deployed to the front to engage emergency targets and to modify the fire plan if necessary.

Antitank artillery, missiles, and rockets can also be employed against enemy defensive troop positions in addition to engaging armored vehicles. If the combat situation requires, these weapons may also be used to suppress an area target.

Air Support

Aircraft support all phases of a battle group's advance and attack. Targets can be either preplanned or on-call. Ground attack fighters will be guided to their target by a forward air controller and a target indication officer. Air strikes are incorporated into the overall fire plan and can be employed against targets throughout the width and depth of the enemy defensive battle formation.

Actions on the Objective

On reaching the objective and while remaining ready to repel an enemy counterattack, the battle group should immediately execute the exploitation phase of the attack. Speed is the key to a successful exploitation. The enemy will be prevented from regrouping, regaining his balance, and mounting a counterattack. For this reason it is the mission of units to prevent the enemy from reorganizing his forces or managing an ordered withdrawal. Targets to the side or behind the lines should be chosen, and certain risks may be taken to maintain the momentum.

THE DEFENSE

The Iraqis consider the defense as a stage in preparing for offensive operations. The most important reasons to employ defensive operations are to protect flanks, consolidate gains, prepare for counterattack, or to wait for reinforcements. The Iraqis describe defensive maneuver as: mobile; stationary (defense in depth), and withdrawal.

The type of defensive operation will be determined by the tactical situation. Factors affecting the selection of a defensive position and the conduct of the defensive operation follow:

- Terrain.
- Defense in depth.
- Mutual supporting fires.
- All around defense.
- Knowledge of the enemy.
- Surprise and deception.
- Camouflage and concealment.
- Proper use of reserves.
- Interlocking fire and barrier plans.

The Iraqis prefer to establish a rear slope defense at brigade and battle group level. This type of defense provides protection from enemy direct fire weapons and limits the enemy's ground level surveillance and observation of Iraqi troop dispositions. If the tactical situation requires it, an Iraqi commander will also establish a forward slope defense.

Counterattack

Iraqi tactics stress threat regardless of the form of defense. The counterattack is the key. Timing of the various counterattacking elements for maximum disruption and destruction of the enemy is absolutely essential. The size of the force committed to the counterattack depends on the size of the penetrating enemy force. For minor penetrations, division armor and antitank reserves can be sufficient. For major penetrations involving one or more enemy divisions, corps-level reserves are committed.

Mobile Defense

The goal of the mobile defense is to defeat the enemy by employing a continuous series of blocking, ambush, and counterattack activities rather than defeating him at a previously defined site. Mobile defense

will usually be conducted by armored or mechanized infantry forces. In a mobile defense there are two distinct phases.

In phase one, the defense will attempt to contain the enemy penetration by channeling attacking forces into the main battle area and develop the situation to permit a successful counterattack. In phase two, the counterattacking force will attempt to cut off and destroy the enemy. If the tactical situation permits, the counterattack force commander will conduct a personal reconnaissance of the battle area prior to combat and ensure that his unit rehearses the counterattack mission.

The Iraqis stress the importance of alternate battle and fighting positions when conducting a mobile defense. Use of these positions provide increased survivability and allow Iraqi heavy forces to maneuver and block advancing enemy units from varying locations within the main defensive area. To assist their overall deception effort, Iraqi tanks may not occupy their primary fighting positions prior to initial contact with enemy units.

Obstacles also play an important part in the Iraqi mobile defense concept. Complex obstacles, created by linking manmade and natural terrain features, are used to slow the enemy's forward movement and to channel him into selected kill zones. Obstacles covered by direct and indirect fire can also be used to separate enemy armor from its supporting infantry.

Stationary Defense

The Iraqis define stationary defense as defense of an area (defense in depth). A stationary defense is characterized by extensive complex obstacle construction and prepared primary and alternate fighting positions for troops and equipment. The Iraqis may adopt a stationary defense under the following conditions:

- Defending forces lack sufficient mobility to adopt a mobile defense
- Vital terrain must be defended.
- Sufficient forces are available to allow for mutually supporting fires.

A unit in stationary defense attempts to make the obstacles in its sector so formidable that no enemy will dare attack it. Instead it is hoped the enemy will choose to attack where Iraqi forces have deliberately left gaps in the obstacle belt, backed up by fixed defenses (in depth), combined with heavy armored counterattack forces deeper still. Enemy forces attacking through the gap will initially make progress, but gradually lose momentum and be halted against the fixed defenses. Before the enemy can reorganize and reposition forces to continue, Iraqi heavy forces plan to counterattack against the flanks of the now stalled penetration, destroying the enemy with a combination of heavy indirect fires, flanking antiarmor fires, combat helicopters, and other weapons.

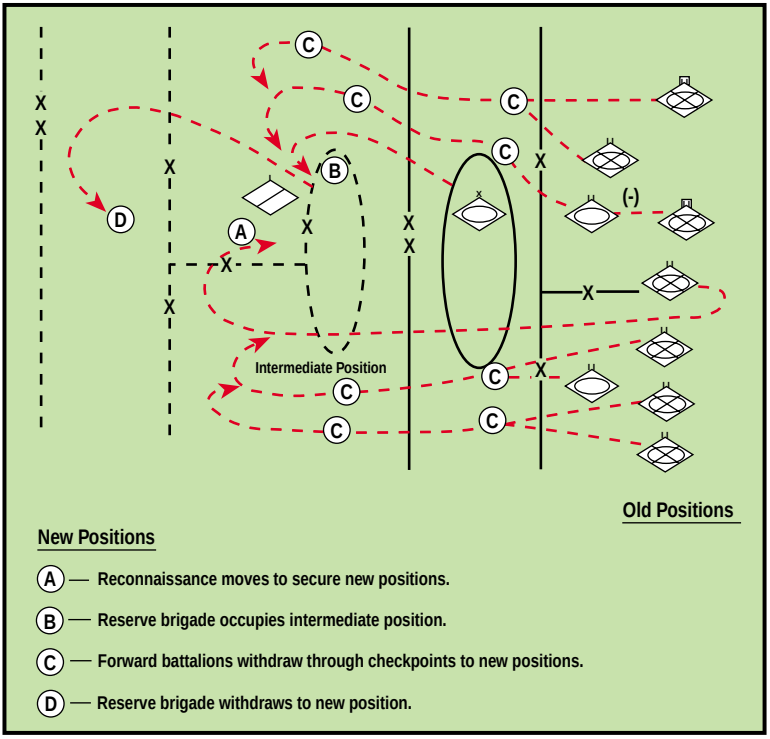
A stationary defense will usually be organized around one or two echelons. An Iraqi unit adopting a one-echelon defense is not in a linear formation, but will retain a balanced depth throughout the defensive area.

Where the attacking enemy is not perceived to be very strong, or where insufficient friendly forces are present to form a successive defensive layer, the stationary defense uses infantry-pure formations with an armor or mechanized infantry counterattack force.

When the enemy force is assessed to be strong, the Iraqis prefer to adopt a defensive formation with two units in the first echelon and one in the second echelon. Infantry or mechanized infantry conduct an area defense. Armored units are not usually deployed in this type of defensive operation except as a counterattack force.

Withdrawal

Withdrawal operations are movements to the rear or away from the enemy. These operations gain time, preserve combat power, avoid combat under undesirable conditions, or draw the enemy into an ambush position. Withdrawals are also used as an operational maneuver to reposition forces, shorten lines of communication (LOC), or permit the withdrawal of a unit(s) for redeployment elsewhere. The time available for the planning and execution of the operation determines the type of with-



Mechanized Division Withdrawal

drawal adopted. The Iraqi army states the principles of the withdrawal are flexibility; simplicity; control; information; surprise; and security.

There are two types of withdrawals: hasty and deliberate. The Iraqis use the term hasty withdrawal to describe a withdrawal accomplished without approval from higher headquarters. Such a withdrawal is a mission of last resort. A deliberate withdrawal is ordered by higher headquarters and is a planned operation. A division will issue withdrawal orders to its brigades and the brigades to their bat-

tle groups. To execute a deliberate withdrawal, the following procedure is carried out:

- **Select a New Defensive Position.** Each brigade directs reconnaissance elements to search for new defensive positions within the sector directed by the division.
- **Occupy the Intermediate Defensive Position.** The commander of a withdrawing unit selects an intermediate area behind the present position. The reserve brigade occupies and secures the intermediate position before the forward brigades begin their withdrawal. At night the forward brigades withdraw directly to the new defensive position, then the reserve brigade withdraws to a new assembly area or rear defensive position.
- **The Iraqis expect the main body to complete its withdrawal within 30 to 35 hours.** All nonessential heavy equipment is moved to the rear with the reconnaissance element at the beginning of the withdrawal. During the movement, a system of checkpoints and rally points is used to maintain control. There are no checkpoints at battle group or combat team level.

The Iraqis also consider operational security (OPSEC) to be integral to the success of a withdrawal. An Iraqi commander will plan for contingencies, such as identifying potential chokepoints along the withdrawal route. A mobile reserve will be maintained to counter unexpected enemy action.

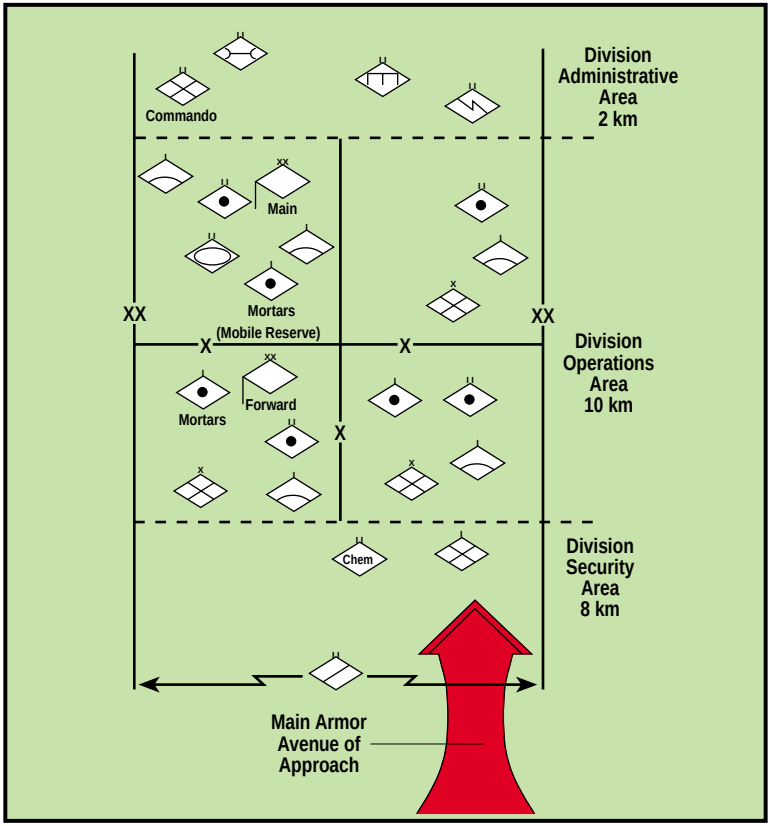
A withdrawal will usually be conducted a night. Radio silence will be strictly enforced and all normal activities (such as artillery fires and offensive patrolling) will be maintained to deceive the enemy that a withdrawal is occurring.

Division Defense

[NOTE: The dimensions that follow are intended to provide general guidance. Actual widths and depths will be influenced by mission, threat, and terrain.] The defensive area for a division is 16-30 kilometers-wide and 12-18 kilometers-deep. In open desert, depths can increase from 30 to 60

kilometers or more for a mechanized infantry or armored division, and 30 kilometers or more for infantry divisions. Frontages can increase to more than 60 kilometers for mechanized infantry (armored) divisions.

A division conducting a mobile defense will defend forward with a small fraction of its total force, typically one reinforced brigade. More



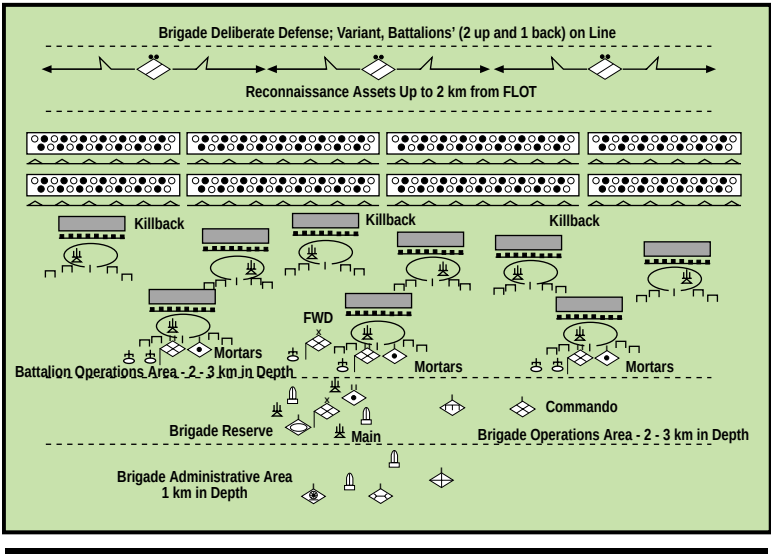
Infantry Division Deliberate Defense

could be deployed forward if the division has more than three brigades. The division's remaining brigades are positioned in depth, prepared to launch a counterattack at the appropriate moment.

If the division establishes a stationary defense, it will usually position two brigades in the first echelon, and one in the second echelon (assuming a division structure of three brigades). The division's armor brigade (if organic or attached) will be deployed in depth, positioned for the counterattack. Different counterattack options are preplanned and often rehearsed.

Brigade Defense

A brigade group defensive sector is normally 5 to 15 kilometers-wide, and is 5 to 9 kilometers-deep. However, brigades may defend fronts 20 kilometers or more, and depths of brigade areas can be 15 kilometers. Brigades in reserve can be 20 kilometers to the rear.



Infantry Brigade Group Deliberate Defense

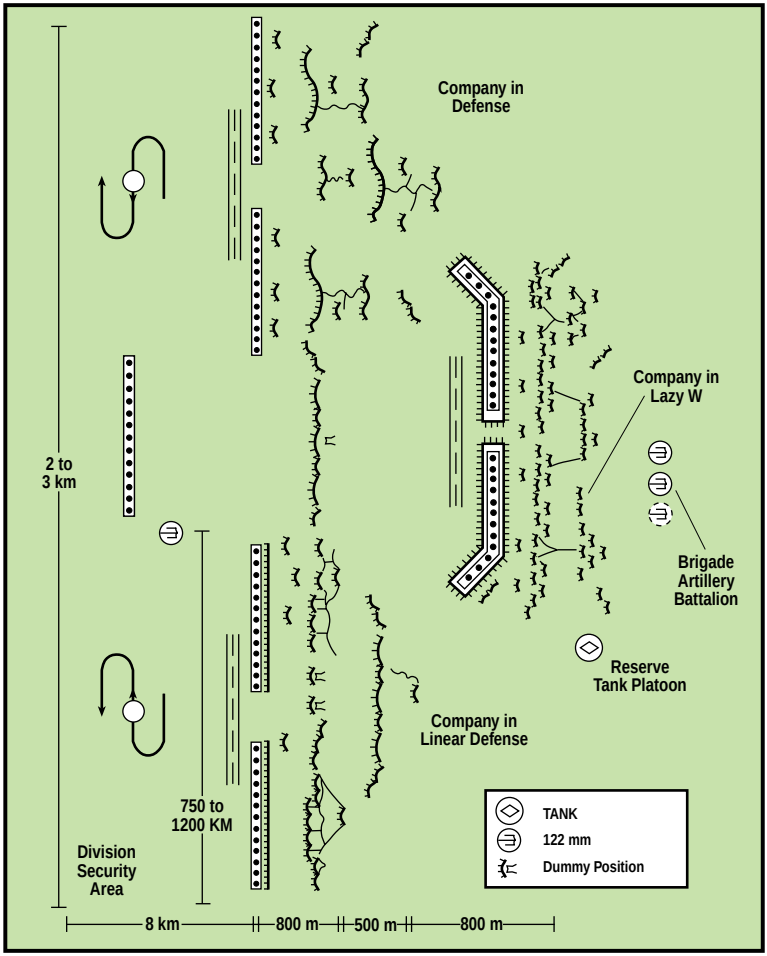
A brigade conducting a mobile defense will attempt to slow and halt the enemy force, making the enemy pay heavily in time and casualties for ground gained. Iraqi conduct of this phase of the defense envisions either a classic “delaying action” or “defense in sector.” For example, it would be either a fighting withdrawal or a series of defensive positions that must be successively taken or bypassed by the enemy, or possibly a mix of these.

The mission of a brigade that has established a stationary defense is to permit no penetration of its first echelon. In this type of defense, a brigade will usually deploy two battle groups in its first echelon and one battle group in the second echelon. To hold the first echelon, it emplaces extensive obstacle belts forward of its main battle area. These belts often span the entire width of the brigade’s sector, and can include a complementary mix of extensive minefield, concertina wire barriers, antitank ditches, and berms.

Battle Group Defense

The width and depth of a battle group defensive area will depend on the type of defense established. These areas are delineated by geographical features (wadis, rivers, streams) and in others by arbitrary lines drawn on a map. There is no apparent system to this delineation, as the presence of geographical features will not necessarily preclude the arbitrary line method.

The battle group concentrates all available direct fire weapons against enemy forces. The battle group also employs all available indirect fire assets to support its defensive effort. This includes mortars, artillery, and fixed-wing aircraft. A forward artillery observation officer is used to keep mortar and artillery fire on target. This officer may use battlefield surveillance radar and night vision devices to assist in his mission. A forward air controller may also be deployed with the battle group to direct Iraqi ground attack aircraft against specific enemy ground targets.



Infantry Battalion Group Defense

Direct Fire Weapons in the Defense

Ranges	Target	Weapons System
4000 m	Armored vehicle on open ground	Ground or helicopter based ATGM
2500 m	Concentrated armored vehicles and targets of opportunity	Tank main gun
1375 m	Armored vehicle on open ground	AT-3, AT-4 or Milan
1000 m	Armored personnel carriers 30 millimeter	Grenade Launcher
750 m	Moving armored combat vehicle	Recoilless rifle and antitank gun
500 m	Fixed armored combat vehicles	Light ATGMs
400 m	Moving armored combat vehicles	Light ATGMs
200 m	Fixed armored combat vehicles	RPG-7

An important part of the battle group defensive effort is its defense against airborne or heliborne forces. To guard against this threat, a battle group commander may maintain a mobile reserve force, establish observation positions in the depth and on the flanks of his main battle area, and ensure that all combat teams are prepared for all-around defense.

Mobile Defense

A battle group normally conducts a mobile defense. In this type of defense, the battle group will defend an area 4 to 6 kilometers-wide and 8 to 10 kilometers-deep. In a mobile defense, the battle group will conduct maneuver between prepared fighting positions. This defensive maneuver can be to the rear, lateral, or forward depending on the enemy disposition and tactical situation. Adjacent units will provide covering fire for maneuvering units. The mobile defense is divided into two primary areas, the covering force area and the main battle area.

Covering Force Area. The covering force provides security for the main body of the battle group. A covering force is generally one-fourth

to one-third of the battle group's combat power. In a mobile defense, the Iraqis assign the covering force a guard mission to:

- Provide reconnaissance and counterreconnaissance.
- Force the enemy to deploy and slow his advance.
- Determine the direction of main enemy attack.
- Provide time for the main body to deploy.
- Destroy the first echelon of the enemy's lead units.

Main Battle Area. The Iraqis state that the main battle area must be conducive to maneuver while simultaneously it provides cover to overwatching units. The battle group will attempt to destroy an attacking enemy force as far forward in the main battle area as possible. Once an enemy force has been slowed or halted, a counterattack will be initiated. An armored platoon or company (minus) usually conducts the counterattack. This unit may also be used to block the advance of enemy forces. The battle group will make all efforts to regain lost territory within the defensive area.

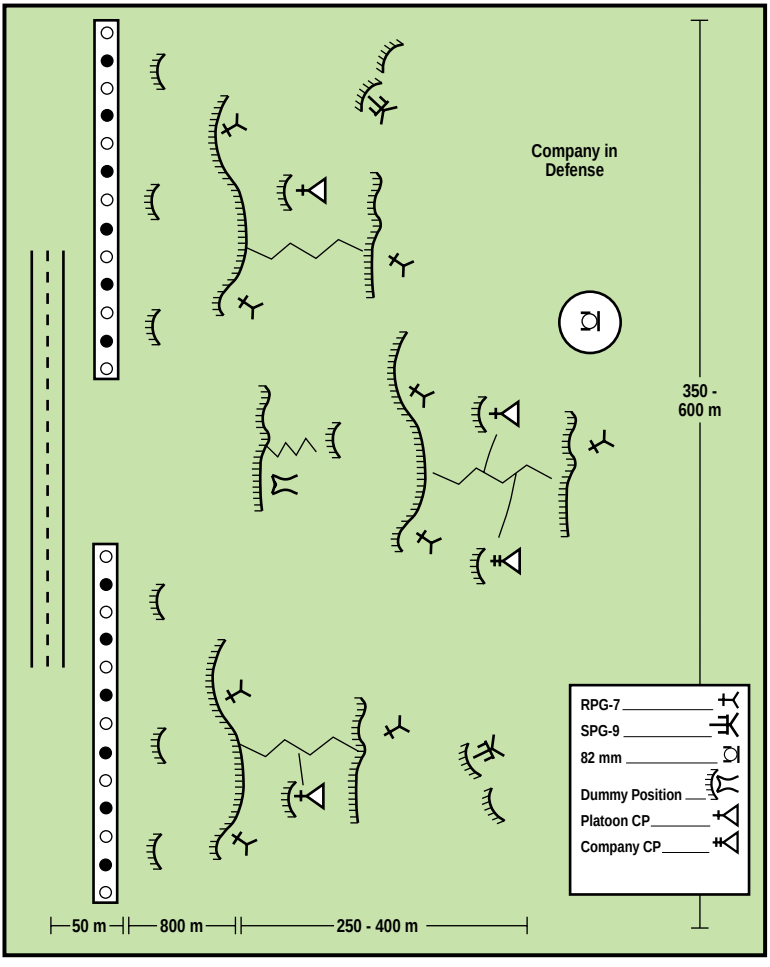
Reconnaissance is conducted by elements of the covering force. If the covering force area is relatively open and the enemy is lightly armed, the battle group's reconnaissance platoon may fulfill this role. An armor heavy combat team will usually provide reconnaissance against armored attacks.

Combat engineers organic to the battle group and attached from higher elements will establish complex obstacles to channel enemy forces into selected kill zones. The engineers will also construct numerous dummy strongpoints, fighting positions, and equipment decoys throughout the covering force and main battle areas.

Stationary Defense

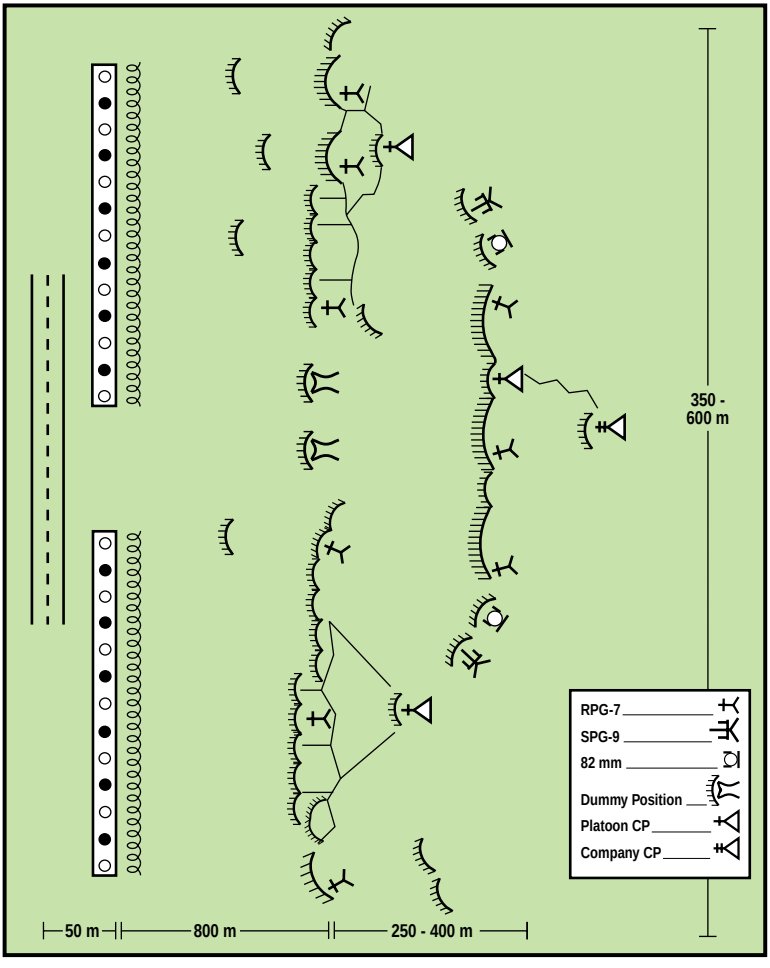
When assuming a stationary defense, a battle group will defend an area from 3 to 4 kilometers-wide, and 3 to 4 kilometers-deep. In this type of defense, a battle group usually deploys its combat teams into two eche-

lons, with two combat teams in the first echelon and one combat team in the second echelon. However, depending on the tactical situation, the



Infantry Company in Defense

battle group may deploy in one echelon and retain a balanced tactical depth between combat teams.



Infantry Company in Linear Defense

A battle group's stationary defensive area is divided into a covering force, main, and rear area. A stationary defense is usually established on vital terrain.

Covering Force Area. The covering force provides security for the main body of the battle group. A covering force is generally one-fourth to one-third of the battle group's combat power. In an stationary defense, the Iraqis assign the covering force a screening mission to:

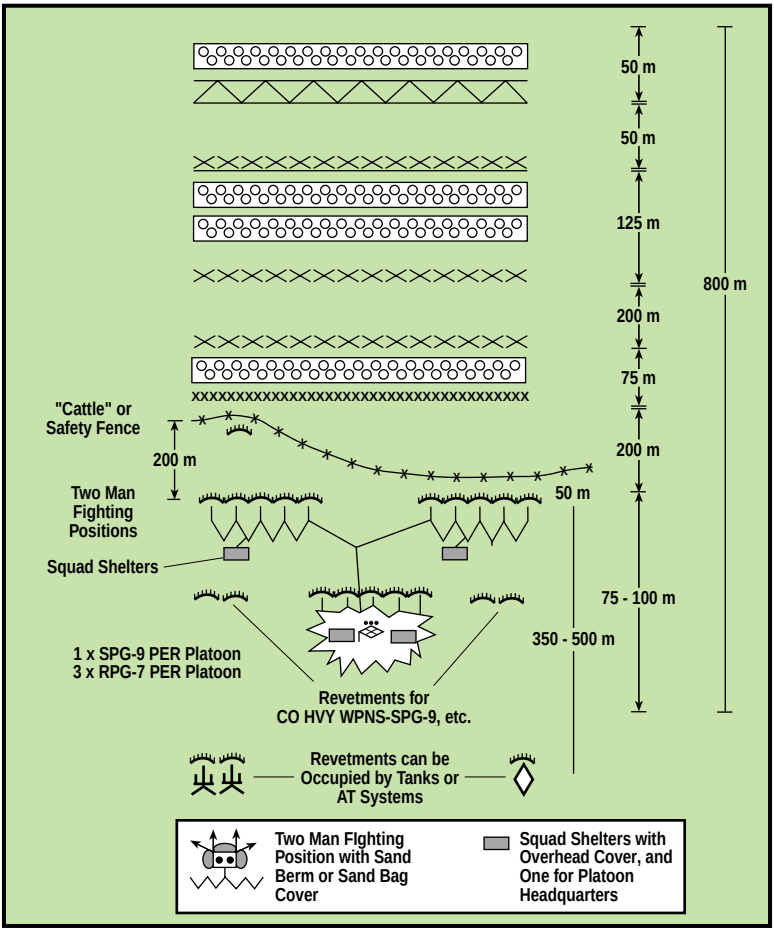
- Provide reconnaissance and counterreconnaissance
- Determine the disposition of the enemy force
- Identify the direction of the main enemy attack

Depending on the terrain, the covering force area is usually 1 to 2 kilometers-deep. The covering force can also provide flank security.

Main Battle Area. The main battle area is usually 2 to 3 kilometers-deep. A battle group employing this type of defense will usually deploy in two echelons with two-thirds of its combat power in the first echelon. All combat teams are deployed in a strongpoint defense to provide mutual supporting fires in a 360 degree radius area.

Mutual support is achieved when the gaps between the combat teams and the individual troop positions on each combat team's flank are covered by direct fire from the opposite team. The platoons within each combat team and the sections within each platoon are also deployed to provide mutual supporting fire.

Reconnaissance in a stationary defense also will be conducted by elements of the covering force. If the terrain in the covering force area is relatively open and the enemy lightly armed, the battle group's reconnaissance platoon may accomplish the mission. If terrain in the covering force area is restricted, then dismounted infantry may provide reconnaissance against light enemy forces. Tanks will usually support the reconnaissance elements against armored attacks.



Infantry Platoon Deliberate Defense

Combat engineers organic to the battle group and attached from higher elements will establish complex obstacles throughout the covering force

and main battle areas. These obstacles channel enemy forces into selected kill zones. The engineers will also construct numerous dummy strongpoints, fighting positions, and equipment decoys throughout the covering force and main battle areas.

Rear Area. The rear area is also known in Iraqi doctrine as the administrative area. Commando troops organic to the division or brigade, troops from the division reconnaissance battalion, or air defense troops provide rear-area security when not occupied with other missions. Administrative and logistics elements are located in the rear area and include maintenance facilities belonging to the combat echelons (division and below). Corps rear areas contain corps-level logistics and administrative sites. Resupply is pushed to the corps depots and pulled from there by divisions. The division operates a rear administrative area (RAA), which is located out of enemy artillery range in a position that offers suitable cover and concealment. The RAA is located near suitable lines of communication to facilitate the transport and receipt of supply items. The RAA includes one distribution point for each brigade and other units organic or attached to the division. Brigades pull their supplies from the division distribution points. Brigade rear areas include a workshop, medical field unit, and a supply and transport company, which draws its supplies from a division distribution point. Battalions receive their supplies from their parent brigade's distribution point and carry them to a battalion distribution point. From there, forward units, apparently down to gun crew level, retrieve their own supplies and carry them to their positions.

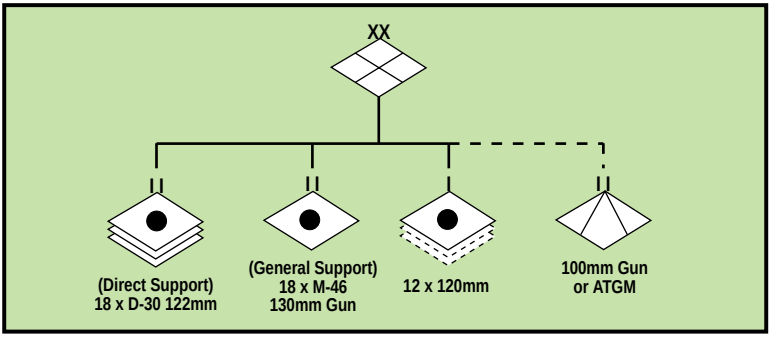
Fire Support

Despite heavy losses during the Gulf War, the Iraqi Army retains a significant fire support capability. Subordinate to the GHQ are a number of rocket brigades or separate battalions. For combat, these units may be attached to a corps or to the RGFC. The rocket brigades may employ short-range ballistic missiles (SRBMs), FROG unguided rockets, and long-range MRLs such as ASTROS II. Both conventional and chemical warheads may be available. The SRBMs include the SCUD B (300 kilo-

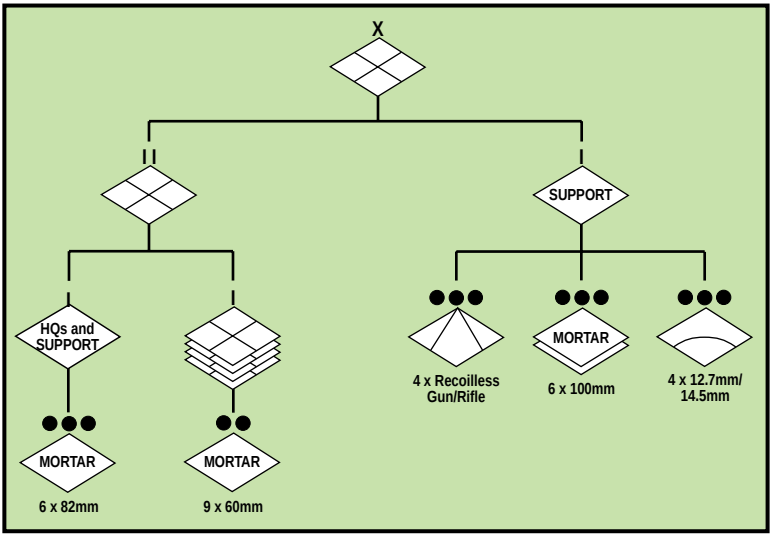
meter-range) and the Iraqi-modified variant, Al Hussein, with a 600 kilometer-range. Iraq has FROG-7 (70 kilometers) and an Iraqi-modified FROG-7 called Layth (90 kilometers).

Iraqi division artillery normally includes an artillery battalion for direct support of each subordinate brigade plus one for general support. The direct support battalions are often attached to the same maneuver brigade for extended periods to better coordinate during combat. Infantry divisions will have all towed artillery; armored divisions and mechanized divisions have a mixture of towed and self propelled (SP). The division will also have one or more “light” batteries of a dozen 120-mm mortars, usually one for each subordinate infantry or mechanized infantry brigade. The mortars are mostly towed but may be SP with mechanized units. Towed 107-mm or SP 81-mm/107-mm MRLs may equip a light MRL battery in infantry divisions. Additional artillery or vehicle-mounted ATGM launchers, may be attached from corps.

Maneuver brigades rely on the division to provide direct support artillery battalions and light batteries of 120-mm mortars. The brigade’s heaviest organic fire support (infantry or mechanized infantry) is included in the brigade support company, which comprises an antitank platoon, an anti-aircraft machinegun platoon, and two mortar platoons equipped with six



Infantry Division Artillery



Infantry Brigade Fire Support

Chinese Type 71 100-mm manpack mortars each. (Brigades that have the 100-mm mortars may not receive a light battery from division.) The infantry battalions each have a mortar platoon with six 82-mm manpack mortars subordinate to their headquarters and support company, and each rifle company has a mortar section with three 60-mm mortars.

Maximum Range of Mortars (Meters)

Mortar Type	Operational Characteristics	Distances (m)
60mm	Hand-held	1,600
60mm	Tripod	2,500
82mm	Russian/Chinese	3,040
82mm	Yugoslav/Chinese	4,945
100mm	Chinese	4,750
120mm	Russian/Chinese	5,700
120mm	Russian with RAP	7,000
120mm	French with RAP	13,000

Special forces brigades subordinate to the RGFC have organic 18-tube battalions of 105-mm towed Italian or Yugoslav howitzers and a battery of 12 120-mm mortars. The latter are reported to have French rifled mortars capable of firing extended range rounds to 13 kilometers.

Target acquisition battalions (called locating regiments) are corps assets that include three identical target acquisition batteries. Each battery is intended to provide support for one division and can cover a front of 8 to 10 kilometers. The batteries have platoons for sound-ranging, optical reconnaissance (including flash-ranging), battlefield surveillance radar, and countermortar/counterbattery radar. The battalion headquarters, which remains deployed with the corps artillery headquarters, also has support with a survey/meteorological platoon and a counterbattery platoon that presumably has more capability than those in the target acquisition batteries. The sound-ranging platoons use a British-designed system (Plessey Mk 2) that employs two advanced listening posts, four or six microphones depending upon the tactical situation, and a vehicle-mounted command post. The countermortar/counterbattery platoons are equipped with British Cymbeline mortar-locating radars which also have some capability against MRLs and howitzers.

RASIT ground surveillance radars are used for artillery reconnaissance as well as for general reconnaissance purposes with two normally assigned to the support battery.

Command and Control

At brigade and above, an artillery officer who plans and coordinates artillery fires serves on the maneuver staff. At division level, he is called the commander of artillery and commands the artillery brigade of the division with its four battalions. At brigade level, the direct support artillery battalion commander may act as the fire support coordinator for the brigade commander. At battalion level, the battery commander may serve as fire support coordinator and forward observer.

Coordination and Communications

The artillery commander is located with the maneuver commander he supports, thereby facilitating face to face coordination of artillery fires. At division level, for example, the chief of artillery is located with the commander in the division's forward command post. An artillery staff officer and radio operators with separate fire support radios are also in the forward command post for execution and planning of artillery fires. Radio and wire are the primary means of communication. The Iraqis probably use all means of communications, based on the tactical situation.

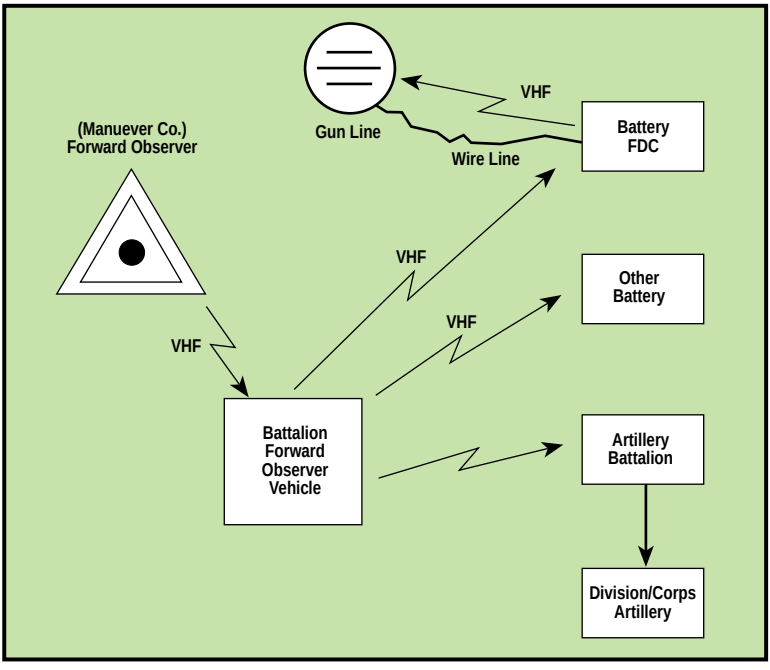
Forward artillery observers may use secure transmission sets. During standard operations, the forward observer is in contact with the command and control battery by landline and uses a fairly simple code to identify enemy targets for plotting purposes, and assignment to the firing batteries.

Fire Control

Artillery fires are controlled through use of direct observation and time phased schedules. Time-phasing, similar to an H-hour sequence, is used to control fires. At the forward division command post, the artillery commander makes necessary adjustments to fires based on effects. A general rule is that forward observers will be located with the headquarters of the forward battalions in both the defense and the offense.

Iraqi artillery uses a dedicated artillery net to control fires. Calls for fire from the company forward observer are cleared through the battalion forward observer who in turn passes the mission to the battery fire-direction center. If additional fires are needed, the battalion observer can request additional supporting fires from division or corps level assets.

Forward observers, and forward air controllers to control aerial-fire support from army aviation, may be located down to company level. If possible, and particularly in the defense, forward observers will use landline telephones to relay fire missions. They should also use landline in prepared offensive positions. To expedite calls for fire, artillery com-



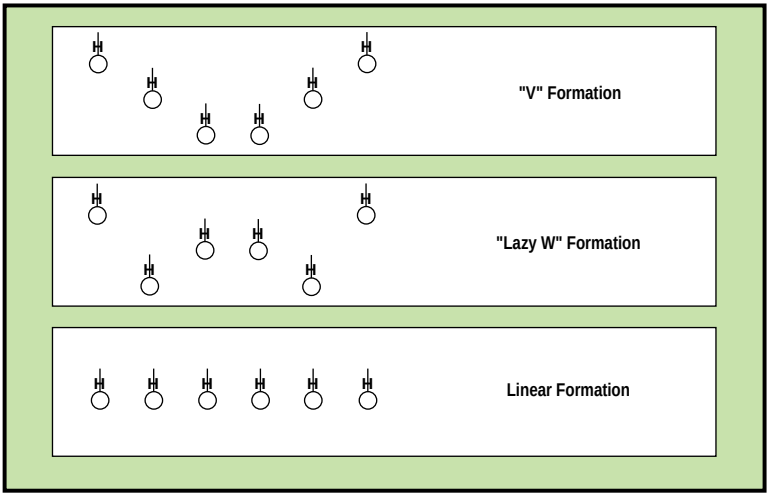
Forward Observer and Fire Control Net

manders will establish a list of code words to represent types of equipment or potential targets.

The Iraqis have some battalion-level technical fire direction computers. However, many artillery units probably still rely upon manual computation to solve gunnery problems. Iraqi fire direction plotting is modeled after the British system.

Tactical Deployment of an Artillery Battalion

Battalion firing positions are emplaced batteries occupying an area 150 meters by 150 meters with two batteries forward and one battery



Battery Emplacement Techniques

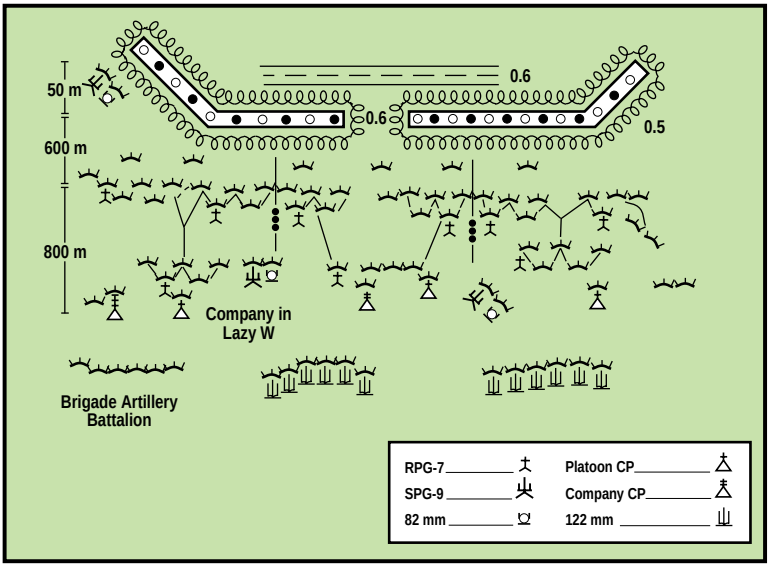
back. Spacing between firing batteries is approximately 150 meters. Artillery battalions may form ad hoc “fourth batteries” where each battery gives one gun. These three guns are then formed into an additional fire unit. The purpose may be to confuse the enemy, or more likely, to provide more flexibility in fire support. The battery command posts and fire direction centers are centrally located in each battery to facilitate command and control. Selection of individual battery positions is made by the battalion commander. Battalion locations are coordinated with the supported maneuver brigade commander. Centralized command and control requirements drive all emplacement and displacement decisions for Iraqi artillery at all levels. Specific Iraqi techniques for positioning individual firing pieces is relatively unsophisticated. Towed artillery is generally emplaced on line by battery, while SP artillery pieces are emplaced on a five-point configuration similar to the fingertip pattern of a hand. It should be noted that a lack of standardization in Iraqi artillery sometimes leads to use of either

emplacement method by either towed or SP units. “Lazy W” formations may also be employed.

Field Artillery in the Offense

Preparatory fires. Preparatory fires include fire mission performed by direct (close) support artillery, general support artillery, and aircraft. Its objective is to weaken the enemy’s resistance by inflicting losses on enemy equipment; destroying enemy defenses, communications centers, and reserves; and destroying forward positions to weaken enemy morale. The preparatory bombardment is fired before H-hour. Its effect must therefore be balanced against the loss of surprise.

Covering fires. Covering fire is one of the duties of direct support artillery. It must be reinforced, to the extent possible, by general support



Company in “Lazy W”

artillery and the weapons of other supporting corps. Its objective is to silence enemy direct fire weapons engaging attacking troops from the start line to the target during an attack or counterattack. Covering fire is fired at H-hour and is continued until the troops reach the target. Covering fire plans are formulated in advance.

Types of Covering Fire

Time Method. The time method is considered essential for major attacks. Preferably, it is employed for all types of attack. It is adopted when information on the enemy is precise.

On-call Targets. On-call targets are one means to provide for flexibility and safety in support methods. They are prepared in detail in advance, but without times. Each target is engaged upon request by forward troops. On-call targets include those which actually affect troops during the attack.

Impromptu Support. Impromptu support covers targets not included in the first two types which appear unexpectedly. These targets are generally small positions of enemy troops, small arms positions, AT guns, or launcher positions. Information on these targets comes from forward, advance troops. It is controlled by the forward observation officers accompanying the attack.

Forms of Covering Fire

Covering fire may be employed when enemy positions are well-known or can be estimated with accuracy. It can assume one of the following forms:

Simple Concentration. Simple concentration is the most common and quickly prepared form of covering fire. In good conditions, a simple concentration executed by a field battery with parallel lines of fire covers an area with a diameter of approximately 150 meters; one executed by a battalion covers an area with a diameter of 250 meters; one executed by a medium battery covers a slightly broader area.

Standard Linear Concentration. Standard linear concentration is essential to engage linear targets on which the shells fall on an approxi-

mately straight line on a specific bearing. This concentration requires longer preparation time than a simple concentration. The standard lengths of it are:

- 300 meters for a field or medium artillery battery.
- 400 meters for a field artillery battalion.
- 500 meters for a medium artillery battalion.

Barrage Fire. Barrage fire is a moving belt of fire behind which attacking troops advance. Execution of a barrage fire is suitable when there is little information on enemy defenses, or when it is not possible to locate enemy positions precisely. A barrage is also useful to help attacking troops maintain the bearing and speed of their advance.

Defensive Fire. Defensive fire is prepared to cover targets during a reorganization on the objective, and to assist attacking troops to hold objectives and counter opposing enemy attacks. These targets are selected on the map of aerial photographs, and they may be registered with fire when necessary and adjusted after occupation of the target. Other targets are added to them during the reorganization period.

Iraqi Targeting Priority (Offense)

Close Support	General Support	Rocket Launchers
Antitank weapons	Div/bde HQ	Arty batteries
FIST/OPs	Arty batteries	ADA sites
Inf/tank plts	Battalion HQ	Logistics facs
Mortar plts	ADA sites	Chokepoints (w/mines)
Minefields	Reserves	Maneuver reserves
Reserves	Engineer units	

Integration of Surface-to-Surface Missiles in the Offense

The short-range, surface-to-surface missile [SSM (FROG)] is often employed as a tactical support weapon as part of corps artillery. When it is used against civilian targets, it is controlled by the GHQ as a strategic weapon. Command and control facilities have been the primary type of tactical target attacked with FROGs.

Strategic SSMs (SCUD, AL-HUSSEIN) are used under GHQ control as support for troops and for firing at strategic targets. Likely targets include fixed targets such as cities, airfields, or oil-related facilities. These targets will probably be preplanned, and launch operations will thus require little, if any, communications.

Field Artillery in the Defense

The goal of close defensive fire is to confuse enemy preparations for an attack and to crush an enemy assault. Defensive fire is divided into:

Close Defensive Fire. The goal of close defensive fire is to crush an attack by striking the enemy during his preparation in his assembly area, and to destroy the forward waves of attacking troops when they advance toward or cross the start line. It is also fired against targets close to the defensive position. Close targets are defined as those targets located at a range of 500 to 2,500 meters from the forward edge of friendly troops. The battalion commander and battery commander are responsible for selecting close targets.

The most dangerous close targets are selected as targets of protective fire. Protective fire covers the most dangerous approaches leading to friendly defensive positions. Guns allocated for direct support or to handle priority requests are laid on the bearing of protective fire missions so long as they are not actually occupied engaging another target. A single protective target can be allocated to a close supporting battery or to a medium platoon or heavy mortar platoon.

Defensive Fire in Depth. The goal of defensive fire in depth is to confuse enemy arrays and preparations during an enemy attack, and to inflict losses on enemy reserves during an enemy assault. The mission of defensive fire in depth is to engage several targets such as headquarters, communications centers, and assembly areas. It has no bearing on combat occurring between defending troops and the forward troops of an enemy assault, except that it prevents the arrival of enemy reinforcements. These targets are defined as being located at a range of more than

2,500 meters from defensive positions. The brigade commander and direct support battalion commander are responsible for selecting them. General support artillery executes defensive fire in depth.

Covering Fire for Counterattacks. The goal is the same as that of covering fire in an attack. It is also employed to cover the occupation of counter-penetration positions.

Field Artillery in Defense and Attack

Harassing Fire. The objective of harassing fire is to weaken enemy morale by confusing enemy troop movements, supply, or installations. Another objective is to bombard enemy supply roads and probable communications centers or reserve areas at irregular intervals. This fire is executed by long-range artillery (general support artillery); therefore, it must be well coordinated with the activities of any long-range patrols organized by forward troops. The preferred level of coordination is division headquarters or higher.

Counterbattery Fire. The goal of counterbattery fire is to destroy or silence the enemy's system of weapons. To execute this, guns and ammunition are allocated for counterbattery missions. A decision is made regarding the counterbattery policy at the highest level. The policy is either:

Active. To obtain physical and psychological superiority over an enemy by engaging every hostile battery that has been located as soon as it opens fire.

Passive. Comprehensive information on targets is collected regarding the deployment and training of enemy guns without revealing to the enemy that such information has been obtained, so as not to compel any change in the locations of enemy guns or to cause them to move. This ensures surprise when fire is opened.

The deputy counterbattery officer from the counterbattery platoon of the target acquisition battery is located at the brigade headquarters. His duty is to collect information on enemy artillery, mortars, and movements. He is directly responsible for coordinating counterbattery fires accord-

ing to the established policy. Reports on hostile artillery and mortar shelling, analysis or craters, and the identification of fragments are sent to the counterbattery staff at division.

Special Missions

Smokescreens. Smokescreens are used to blind enemy observation; limit the enemy's observed artillery fire; limit the enemy's firing of small, aimed arms; limit the enemy's firing of AT weapons; and block and conceal friendly troop movement. A smokescreen is used in a simple or linear concentration using smoke instead of high explosive rounds. All smoke missions must include alternate missions with high explosives, which can be fired if the smoke is ineffective due to the unsuitability of the meteorological conditions.

Illumination. The illumination shell is employed to assist in the observation of the battlefield at night; troops in the effective employment of their weapons; and in the adjustment of artillery fire at night.

Colored Smoke. Some colored smoke rounds are employed to indicate targets.

Propaganda. Artillery fires shells to deliver pamphlets, photographs, and documents for propaganda purposes.

Iraqi Targeting Priority (Defense)

Close Support	General Support	Rocket Launchers
Inf/tank plts	Div/bde HQ	Arty batteries
FIST/OPs	Arty batteries	Assembly areas
Engineer plts	Battalion HQ	Chokepoints(w/mines)
Mortar plts	Engineer units	Ammo points
Minefields	Reserves	Maneuver reserves
Reserves	Logistical sites	ADA

Engineers

The Iraqi army is equipped with engineer personnel and resources to support offensive and defensive operations. Engineer units are organic from

GHQ to brigade level. GHQ controls several engineer battalions (used primarily for road and airfield construction) and a bridging brigade.

A field engineer battalion and an engineer bridging battalion are organic to the Iraqi corps. The field engineer battalion is equipped with an unknown number of IFA and ZIL trucks with barbed wire-laying equipment, graders, and GAZ-66 and MAZ-469 transport vehicles, as well as TMM-3 bridges and AVLB girder bridges. Exact numbers of available vehicles cannot be determined, because they are controlled by both corps and GHQ. GHQ moves them around the front, based on its analysis of tactical requirements. The battalion's mission includes constructing obstacles and defensive positions, performing engineer reconnaissance, controlling the water supply, clearing enemy obstacles, building roads, and supporting bridging units in bridging operations.

The engineer bridging battalion is equipped with an unknown number of MTU-20 scissor bridge vehicles, PMP pontoon bridge vehicles, and GSP ferries.

Each armored, mechanized, and infantry division has an organic field engineer battalion. The battalion is composed of three engineer companies and a general support company. The battalion of an armored or mechanized division also has an AVLB platoon. The engineer companies are frequently attached to infantry brigades on the frontlines. This battalion is equipped with a number of IFA, ZIL, and GAZ trucks; the ZILs are equipped with barbed wire layers and graders. The responsibilities of the battalion include construction of obstacles and defensive positions and engineer reconnaissance. The unit also clears enemy obstacles, builds roads, provides bridging support, and assists the chemical defense unit in decontamination operations.

Iraqi engineer units have a wide variety of equipment and munitions. Most engineer equipment is Soviet; however, some Chinese and Western equipment is in their inventories as well. The Iraqi landmine inventory is a large and diverse mix of munitions from around the world.

ENGINEER SUPPORT MISSIONS

On The March

During advance operations, where an advance guard is employed, engineers are employed well forward to facilitate movement. In the advance party, an engineer element will be attached to the lead reconnaissance company. Three engineer platoons will generally lead the advance guard main force. The size of these engineer elements depends upon manmade and natural obstacles reported by intelligence.

In the Offense

Iraqi engineers are tasked to support offensive operations with engineer reconnaissance, preparation and maintenance of routes, and obstacle clearance. The engineers' primary mission is opening gaps in minefields or other obstacles along the main axis of attack. Engineers use a metallic mine detector or probes to locate the mines. They use countermine equipment such as plows or rollers mounted on tanks and/or explosive line charges.

Iraqi doctrine requires only one lane through a minefield per infantry and tank company. Lane width is usually 8 to 12 meters. One gap is specified for tank companies. Minefields are marked by flags in the daytime, with each company having its own color. Flares are used at night. Minefield breaching operations are expected to occur at night.

In the Defense

Responsibilities of engineer units in defensive operations are listed in order of importance:

- Construct manmade and improve natural obstacles including minefields. Mark and map minefields. One antitank mine is normally laid with three antipersonnel mines. Occasionally, trip-wire activated antipersonnel mines are laid in addition to pressure-activated antipersonnel mines.
- Construct headquarters field bunkers.

- Ensure necessary roads are usable. Quickly build needed roads. Deny roads to enemy use.
- Conduct engineer reconnaissance.
- Establish water points. Test for water purity in conjunction with medical units.
- Construct defensive positions and camouflage headquarters area.
- Build helicopter landing pads.
- Prepare wells and water sources for demolition.
- Flood areas to hinder enemy mobility; drain areas to improve own mobility.

Engineer Reconnaissance

On the March. Engineers are located well forward within movement formations to facilitate mobility of the main force.

In the Offense. Identification of enemy obstacle and fortification effort is a priority during offensive missions. Engineers may participate in this reconnaissance effort.

In the Defense. An engineer platoon is generally located in the defensive security zone with the reconnaissance battalion.

Movement Support

Lines of Movement. The Iraqis have constructed a sufficient road system. Iraqi engineers are experienced with hasty road construction in a harsh environment where few alternate routes exist.

In the Defense. Iraqi engineers can construct and maintain the necessary road networks to allow rapid movement of reserve or counterattacking forces.

Road Preparation. The Iraqis have extensive road construction and improvement capabilities. These roads are for reinforcement, supply and resupply of the forward defensive line. Construction techniques include route clearing, widening, and oil surface treatment.

Iraqi combat engineer equipment is predominately civil engineering equipment, such as dozers and graders. They may have some older Soviet equipment, to include: BAT-M route clearers, MDK ditching machines, TMK trenchers, and IMR (T-55 based) obstacle clearing vehicle. Other equipment is quite varied as it has been purchased from several nations.

Iraqi engineers probably train to former Soviet standards. The Soviet standard for preparation of a hasty road in desert terrain was 2.5 to 3 kilometers per hour. This estimate is with an engineer road platoon employing mechanized means (BAT, truck-mounted crane). Soviet engineers would construct cross-country routes as necessary. An engineer company (with 2 or 3 graders, 2 or 3 dozers, 4 to 6 crane shovels or backhoes, 4 to 6 rollers, and 10 to 12 vehicles) can construct 2 to 2 1/2 kilometers per day in moderately sandy terrain. An engineer company (with 2 dozers, 4 to 6 rollers, 10 to 12 dump trucks, and 4 to 6 crane shovels or backhoes) can repair 10 kilometers per day in moderately sandy terrain.

Overcoming Water Obstacles. Iraqi bridging assets consist mostly of Soviet-made equipment:

Soviet MTU-20 (AVLB)
Czech MT-55 AVLB (Iraqi AVLB units)
TMM Truck Launched Bridges
PMP Pontoon Bridges
GSP Amphibious Ferry
PTS Amphibious Transporters
AVLB

Mineclearing. Engineer units hold Iraqi countermine equipment. The Iraqis employ British and Soviet countermine doctrine, but their units have fewer countermine assets overall than equivalent Soviet units. Iraqi countermine equipment is technologically simple, yet has the capability to defeat complex obstacles which include mines, if the equipment is used in combination.

The Iraqi inventory of countermine equipment is as follows: hand-held mine detectors and Soviet vehicle-mounted mine detector (DIM). The Iraqi hand-held mine detection capability was recently upgraded with UK-produced MD2000 metallic mine detectors. They can detect mines with a low-metallic content. They are used in conjunction with the Soviet and Iraqi hand-held metallic detectors and the Soviet vehicular-mounted DIM mine detector. The Iraqis have little or no equipment to detect non-metallic mines.

Soviet tank-mounted mine plows (KMT-4/6) and rollers (KMT-5). A tank platoon is allocated one KMT-4/6 or KMT-5 from the division field engineer battalion if supplies allow.

Soviet rocket-propelled line charges with vehicular and man-portable variants. The trailer-mounted version is the UR-77, which clears a lane 90 meters long and 6 to 8 meters wide, with a standoff of 150 meters.

Bangalore Torpedoes. Hand-emplaced explosive line charges used in a manner similar to those used by U.S. forces.

Fuel Air Explosives (FAE). FAE can be useful for mineclearing operations due to both blast and overpressure effects.

Mechanical mine clearance equipment is expendable by nature. Therefore, sustained offensive operations utilizing mechanical mine clearance equipment could result in shortages of the equipment resulting in a decreased countermine capability.

Engineer Obstacles

Types of Minefields

The Iraqi army maintains a large stockpile of mines (estimated at 10 million) that can be deployed manually, mechanically, aerially, and by artillery/rocket. Iraq has acquired state-of-the-art mines from numerous countries. All types of antipersonnel (AP) and antitank (AT) mines are available, as well as limpet, sea mines, and antilanding mines. Some of these mines are designed to thwart detection and disarming.

The Iraqi army may have chemical mines with mustard fill.

Defensive positions are supplemented with minefields and non-explosive obstacles such as AT ditches and wire. Minefields are placed to channel enemy armor into the divisional kill zones, which may contain more mines, tank traps, trenches, and concertina. In some locations, an approaching enemy may also face Iraqi flooding operations. Thus, the channeling minefields serve to complement the AT weapons at the Iraqi commander's disposal.

Various scatterable mines currently available in Iraq further complicate an enemy's breach of an Iraqi defensive position.

Ground-based mine dispensers include the following:

Soviet mechanical minelayers (PMR-3)
Italian vehicular scattering system (Valsalla)
Soviet BM-21 MRL (122mm)
Chinese type 81 minelaying rocket system (122mm)
Brazilian Astros-II medium MRL (180mm)
Iraqi/Yugoslav MRL (262mm)
Brazilian Astros-II heavy MRL (300mm)
FROG-7 rocket
SCUD missile
Several artillery systems

Aircraft mine dispensers include the following

Soviet Mi-17 HIP helicopter
Soviet Mi-25 HIND helicopter
Hawker Hunter aircraft
Mirage aircraft
Su-25 Frogfoot
Transport aircraft

Establishing Minefields

Minefields are generally Soviet in design in that they are linear, tied into other natural and manmade obstacles, and placed to force units into fire

sacks or enhance the effectiveness of covering fires. Minefield dimensions have commonly been configured 500 meters by 30 meters with 1 AT mine per meter of front. Minefield depth in well-prepared positions can be as much as 350 meters. Non-mechanical emplacement includes throwing mines randomly off trucks then burying mines by hand.

Fortifications

The Iraqis use a stationary defensive line, consisting of one or more rows of defensive positions fortified with natural and manmade obstacles, backed by a mobile reserve, generally an armored unit when available.

Iraqi engineers also construct command bunkers. One method utilizes Soviet or Soviet-copied prefabricated materials. A simple curved frame is constructed in the ground and is covered with wood or steel planking. The entire structure is covered with earth and then with 15 to 20 inches of gravel (0.75 to 1.5 inch stones). Gravel (not of standard size) would cause the rounds to explode before striking the metal. A typical sized bunker about 5 yards long would take 4 hours to construct. They also use pre-fab concrete and locally available material.

The Iraqis prepare defensive positions using water-filled ditches, dry AT ditches, strongpoints, berms, minefields, barbed wire — all covered by interlocking fields of fire and anchored on natural obstacles. These multiple defensive positions can be established within 1 week on a wide front with the use of bulldozers and large dump trucks. Indiscriminate mining — without the use of mining plans — is a direct result. This lack of planning creates problems when sector control is transferred to a new unit.

The Iraqis may also dig ditches, fill them with oil, and use them to augment their defenses with massive “fire trenches.” These “fire trenches” could have a significant impact on combat operations. The general area will be lit up, eliminating any “cover of darkness” advantage. Since the fire trenches are in front of the defensive line, forces attacking through the obstacle will be illuminated by the fire backdrop. Heat-seeking munitions, thermal imagery, and infrared systems will also be affected.

The Iraqis could also use the destruction of oil wellheads as an obstacle to attacking forces. Some types of sour crude emit hydrogen sulfide. Breathing this gas has effects ranging from disorientation to death. Also when this gas contacts water, such as perspiration, mucous membranes, and the eyes, the resulting sulfuric acid causes burning and blistering. The demolition of some wellheads could therefore create a contaminated environment.

Iraqi Mines

Iraqi mines include AP and AT landmines as well as illumination, signal, limpet, and naval. Of note, some of these mines are designed to thwart detection and disarming. For example, the Italian SB-series of scatterable mines feature the option of antihandling devices; are blast-resistant; and are nearly nondetectable by metallic mine detectors. The blast resistant and magnetic influence-fuzed AT scatterable mines are sophisticated and are indicative of the potential of the mine threat worldwide.

Iraqi combat engineers were effective during the build-up period after the 1990 invasion of Iraq. Drawing upon years of practical experience and a huge inventory of landmines, their engineers fortified both the Kuwaiti coastline and the Saudi border with more than 400 kilometers of explosive obstacles. The minefields, containing more than 3.5 million landmines, were complemented by an array of other obstacles such as fire trenches, berms, and concertina entanglements. Iraqi forces intended to slow an allied advance, channel it into kill zones, and allow Iraqi reserve units additional time to react to allied movements.

Iraq continues to hold an impressive array of mine delivery capabilities for both scatterable and hand/mechanically-emplaced mines. Most of their scatterable mines can be dispensed by helicopter. However, other scatterable mines are deliverable by aircraft and by both light and heavy MRL. A considerable portion of the enormous Iraqi mine inventory may have consisted of scatterable mines, but no scatterable mines were employed by Iraq during DESERT SHIELD/STORM. However, scatterable mines could have been a significant threat to breaching operations.

Iraqi Landmine Holdings

Conventional AP Mines	Country of Origin
M14 AP blast mine	US
PMA-3 AP blast mine	FYU
PMN and Type 58 AP blast mines	CH, IZ, UR
PMD-6 AP blast mine	FSU
POMZ-2 and POMZ-2M fragmentation AP mines	FSU
PPM-2 AP blast mine	FGE
PP-Mi-Sr bounding fragmentation AP mine	FCZ
PRB M409 AP blast mine	BE
PRB M413 fragmentation AP mine	BE
PROM-1 bounding fragmentation AP mine	FYU
P-25 AP fragmentation mine	IT, IZ
P-40 bounding fragmentation AP mine	IT, IZ
Valmara 69 bounding fragmentation AP mine	IT
M16 bounding fragmentation AP mine	US
MON-50 directed fragmentation AP mine	FSU
MON-100 directed fragmentation AP mine	FSU
MON-200 directed fragmentation AP mine	FSU
HPD-F2 AT shaped-charge mine	FR
L9A1 (Barmine) AT blast mine	UK
M19 non-metallic AT blast mine	US
MAT-76 AT blast mine	RO
PRB M3 AT blast mine	BE
PT-Mi-Ba III AT blast mine	FCZ
TC/2.4 and M/80 AT blast mines	IT, EG
TC/6 and TCE/6 AT blast mines	IT
TM-46 AT blast mine	FSU
TMN-46 and Type 59 AT blast mines	FSU, CH
TM-57 AT blast mine	FSU, IZ
TM-62 AT blast mine	FSU
Type 72 (plastic body) AT blast mine	CH
VS-2.2 AT blast mine	IT, SN
M21 plate-charge AT mine	US

Scatterable Mines	Country of Origin
EM-20 scatterable AP blast mine	GR
SB-33 scatterable AP blast mine	IT, SP
SB-33/AR scatterable AP blast mine	IT, SP
VS-50, TS-50, and T/79 scatterable AP blast mines	IT-EG
SB-81 scatterable AT blast mine	IT, SP
SB-81/AR scatterable AT blast mine	IT, SP
VS-1.6 scatterable AT blast mine	IT
VS-1.6/ARAN scatterable AT blast mine	IT
MRL (ABABEL) delivered scatterable AT mine	FYU, IZ

Landmines Emplaced by Iraqi Forces during DESERT SHIELD

AP	
Italian TS-50 & VS-50	Chinese, Iraqi, Former Soviet PMN
Italian Valmara 59	Chinese Type 72
Italian Valmara 69	Belgian PRB M409
Italian P-25	Former Soviet MON-50
Italian P-40	
AT	
Italian VS-1.6	Former Soviet TM-62M
Italian VS-2.2	Chinese Type 72
British L9A1 Barmine	Belgian PRB M3
Former Soviet TM-46	Czechoslovakia PT-MI-BA III
Former Soviet TM-57	

Engineer Camouflage Measures

Iraqi doctrine for camouflage and concealment stresses the importance of proper utilization of the terrain including the use of natural concealment for movements. In barren desert terrain, movement of troops or vehicles is very vulnerable to enemy reconnaissance. Thus, hills, valleys, and wadis will be used to conceal troop and vehicle movements. The Iraqis will also use the cover of darkness for troop displacement thereby concealing the dust plumes caused by such movement. Techni-

cal measures of camouflage include coloring (speckling), using artificial screens, and using deceptive lights.

Iraqi artillery positions are often vacated at night and decoys left behind. Decoy tanks, aircraft, and anti-aircraft systems are also employed. Many of the decoys are highly detailed mock-ups constructed from fiberglass or sheet metal and accurately painted. The Iraqis are primarily concerned with the visual signatures of the decoys.

Combat Service Support

DOCTRINE

Iraqi logistics doctrine is a composite system reflecting influence of the former Soviet Union at strategic levels as supplies are pushed down from national and GHQ depots, and British influence at operational and tactical levels as lower echelons pull from brigades, brigades from divisions, and corps.

ECHELON SYSTEM

The Iraqi army classifies combat service support by echelon. Echelons are referred to as Echelons F, A, and B.

- Echelon F is the combat element of the battle group. It is the largest echelon and is composed of individuals and equipment necessary for combat on the battlefield.
- Echelon A is composed of combat service support assets at the battalion and brigade group level. In mechanized and armor-heavy battle groups, Echelon A is divided into A1 and A2 sections. The forward elements of the A2 section are called the Immediate Replenishment Group (IRG).
- Echelon A1 deploys within 3 to 5 kilometers of the forward combat units.
- Echelon A2 deploys further to the brigade rear, 15 to 20 kilometers from the forward battle groups.

- Echelon B refers to combat service support elements at the division level supporting the brigade groups located 30 to 50 kilometers behind the forward combat elements.

REPLENISHMENT

Basic Load

The individual soldier carries a 1-day supply of ammunition, rations, and water. The daily basic load of ammunition for an infantryman is 120 rounds of rifle ammunition. Platoon through brigade each carry a 3-day basic load; division carries a 5-day basic load; corps carries up to a 15-day basic load.

Water

The normal daily water issue is 3 liters per day per soldier. When required, soldiers are issued a 1-liter water canteen and are trained to sustain operations on this allotment for a period of 10 days. Each company headquarters is supplied with a 100-liter aluminum tank from which company personnel could obtain water. Five-gallon water cans are available in the company administrative area.

Replenishment Procedure

Priorities for replenishment in the battle group are dictated by battalion, or brigade group headquarters. The A1 Echelon commander will allocate resources according to need. The quartermaster will take uploaded vehicles to the company, or combat team. Empty vehicles will return to A2 Echelon where they will be restocked by either the IRG or from a pre-selected distribution site. They will then return to A1 Echelon ready to be called forward.

POL SUPPLY

Fuel tankers draw fuel from the corps area and transport it to refueling points in the brigade, or division distribution sites. Battalion fuel tankers draw fuel from the brigade petroleum, oils, and lubricants (POL) supply

point and refuel battalion armored fighting vehicles. At battalion level and below, fueling is also accomplished by using fuel-filled jerry-cans or rubber fuel tanks, each with a capacity of 2,250 liters. Two bladders can be loaded on each 5-ton truck.

Fueling without fuel tankers is accomplished by meeting with trucks loaded with jerry-cans filled with fuel. In most vehicles, the uploaded POL capacity in main fuel tanks and reserve containers will suffice for approximately 250 kilometers. Fuel stores at A1 Echelon (battalion) and A2 Echelon (brigade) known as first line reserve supply, will suffice for another 150 kilometers of movement. Empty POL resupply vehicles from A1 Echelon proceed to the A2 echelon for refueling from the brigade IRG. Vehicles are usually replenished at pre-selected meeting points.

When refueling is completed, vehicles proceed to the ammunition, ration, and water supply points, each approximately 150 meters apart. After passing the final replenishment point, vehicles move to a pre-established location for night assembly depending on the tactical situation.

AMMUNITION

Ammunition will occupy most of Iraqi corps transportation assets. Ammunition expenditure rates against mobile targets in the desert will be high, so the management of ammunition stocks during combat will largely determine the ability to sustain operations. Ammunition is ordered by types of rounds. Each maneuver battalion requests its ammunition from the Brigade Administrative Area (BAA), or A2 echelon. The request is forwarded to the Rear Administrative Area (RAA), or B Echelon. The RAA receives supply requests from the BAA or directly from battle group units and moves necessary supplies to the BAA for distribution to forward battalions.

TRANSPORTATION

Although supply trucks themselves will consume a very high proportion of fuel, the army can draw upon a large military and civilian motor transport infrastructure capable of lifting enough POL and ammunition

to sustain limited offensive operations. The “workhorses” in the vehicle inventory are the 5-ton IFA-W50, 2-ton GAZ-66, 15-ton MAZ-543, the 10-ton ZIL-135, and the 3- to 5-ton URAL trucks.

MAINTENANCE

The Iraqi army maintenance capability is assessed as low because of poor training, a lack of skilled technicians, inadequate repair facilities, lack of spare parts, and a “pass it on” maintenance philosophy.

Light to medium maintenance and repairs are performed at the operator-level by mobile Electrical and Mechanical Engineering (EME) repair detachments usually using parts cannibalized from deadlined vehicles.

Although reparable vehicles can be moved to brigade and division-level EME workshops for second-line maintenance, the preference is for divisional workshop repair detachments to be sent forward to augment first-line field EME detachments. In reality, only limited repair is performed at divisional workshops. Equipment and vehicles that cannot be repaired by forward or divisional repair teams are returned to corps or national depots for capital repair.

Although the Iraqi army recognizes a need to maintain and repair equipment forward rather than to replace, they probably will continue to return vehicles to rear area depots.

Special Operations Forces

The Iraqi Special Forces have five basic missions:

- Reconnaissance
- Airborne and air assault operations
- Counterinsurgency and population control
- Unconventional warfare and amphibious strike missions behind enemy lines
- Seize and hold key terrain

Iraqi Special Forces are trained to conduct reconnaissance in forward frontline positions and counterreconnaissance deep behind enemy lines. Special forces also eliminate enemy listening and observation posts, and tap land LOCs. In addition, they perform rear-area security missions for their parent corps and provide their assigned divisions a limited capability to conduct reconnaissance and raids in the immediate area of the forward line of troops.

The Iraqis maintain a limited air assault capability. Only special forces are airborne-qualified.

The high level of fitness and specialized training for operations in mountainous, swampy, and urbanized terrain make them the unit of choice for counterinsurgency campaigns, population resettlement, and the suppression of internal uprisings.

Special forces brigades have a limited role in the conduct of unconventional operations. The internal organization of the special forces does not reflect the specialization required to raise and train guerrilla forces behind enemy lines or conduct sabotage or subversive operations.

Elite special forces units, usually deployed in air assault operations, are used to seize and hold important front-line positions, patrol difficult terrain, secure key lines of communication and protect important installations. Tables of organization and equipment reports reflect supporting artillery, mortar, and antitank guided missile companies assigned to each special forces brigade. Special forces units tend to be misused, as they are frequently required to remain in frontline static defensive positions long after they complete their original mission.

Unconventional Warfare and Tactics

RADIATION DISPERSAL WEAPONS

During the occupation of Kuwait, Iraqi troops removed radioactive material from hospitals and laboratories in Kuwait. Although this material could not have been used to make a nuclear weapon, it is possible that Iraq

could have used or in a future conflict could possibly use this material to create radiation dispersal weapons, i.e., weapons designed to disperse radioactive material. Such weapons can be delivered either by aircraft or missile and can be used to deny areas to enemy troops or as a terror weapon against population centers. In addition, radioactive material can be used by retreating troops to contaminate areas or to set booby traps. The radioactive material can be in solid, powder, or liquid form and can be detected only by performing a radiological survey of suspected areas.

ELECTROSHOCK

During the Iran-Iraq War, Iraqi forces used electroshock as a defensive weapon near Al Basrah against invading troops. A network of cables was deployed in low swampy/marshy areas along the Shatt-Al-Arab to electrocute troops wading in brackish or fresh water. Electrified cables are extremely hard to detect in these marshes and were very effective in repelling Iranian ground attacks. The power for these cables is derived from either the local power grid or from a series of tactical power generators. A field strength 2-V/ft and a small current (15 to 70 mA) will incapacitate unprotected troops wading in water. This electroshock will cause leg paralysis, respiratory problems, collapse, and possible drowning.

This Iraqi defensive tactic could be used against U.S. forces in selected areas such as potential attack routes in swamps or along shallow river banks and beaches in the northern Arabian Gulf. The most significant threat is to wading soldiers. Troops riding in rubber rafts, air-cushioned vehicles, or amphibious vehicles are assessed to be relatively safe from electroshock injury.

OIL, GAS, AND PRODUCT PIPELINES

Throughout the Arabian Gulf region, large- and small-diameter pipelines represent a potential threat to U.S. forces in that they can be used as a medium to transport and discharge a toxic or flammable gas, or oil. During the Iran-Iraq War, Iranian forces used gas pipelines to transfer and deploy hydrogen sulfide gas (H2S) against advancing Iraqi forces

near Abadan. The transfer and release of another gas called, “wet” gas (a combination of methane and liquefied-petroleum gas [LPG]) can be used to initiate a massive ground fuel-air explosion. A ruptured “wet” gas pipeline exploded in the Russian Urals, killing over 100 passengers and derailing two trains.

H2S is a colorless, toxic gas that is flammable and in very low concentrations (10 ppm) smells like rotten eggs. At moderate concentrations (20 to 400 ppm) H2S will not smell but will irritate eyes, nose and throat, cause skin rashes, headaches, vomiting, and diarrhea. H2S is fatal at high concentrations (400 ppm or above). Standard-issue gas masks will provide temporary protection against high concentrations of H2S gas. How long this protection will last depends on the concentration of H2S in the air.

Wet gas is colorless, odorless, nontoxic, flammable, and highly explosive. Both H2S and wet gas is heavier than air and, under cool, calm conditions, these gases will settle into lowlands or underground bunkers and pose a significant threat. In the northern Arabian Gulf, winter nights offer the optimum conditions for employing these gas tactics.

Oil pipelines can also be used defensively to deliver large volumes of oil to flood lowlands and ditches to create obstacles and reduce trafficability. When discharged over the Arabian Gulf, oil slicks will threaten coastal desalinization plants. Also, if ignited, burning oil creates dense smoke plumes which can visually obscure defensive positions.

Other Considerations

NUCLEAR, BIOLOGICAL AND CHEMICAL (NBC) OPERATIONS

General

Terms of the April 1991 formal cease-fire agreement between the UN and Iraq stipulated that Iraq renounce its commitment to acquire or develop any WMD — nuclear, biological, or chemical (NBC). Iraq committed itself to allowing UN inspections and destruction of its NBC weapons, related

materials, and facilities. At the same time, they made every possible effort to conceal their capabilities and facilities from the UN inspectors.

Nuclear

On 1 January 1994 a representative of a UN monitoring team stated that the UN had dismantled Iraq's nuclear program. He claimed that many of Iraq's nuclear sites and facilities were damaged by allied bombing during the Gulf War, and that UN inspectors had dismantled the surviving equipment. There is increasing evidence however, that UN inspection teams did not achieve total destruction of Iraq's nuclear facilities. Iraq may have retained some capabilities through dispersal and concealment. Iraq also retains several skilled nuclear scientists and technicians, capable of reconstituting and rebuilding the nuclear program if UN sanctions and inspections programs are lifted.

Biological

Although Iraq strongly denies developing biological weapons, UN inspection teams found evidence that Iraq pursued research into biological weapons development. Iraq may have produced at least the agents anthrax and botulism. Iraqi biological warfare research facilities were highly covert and many were collocated with pharmaceutical or industrial plants. Virtually undetectable, stockpiled biological agents and associated production equipment may have been dispersed after the Gulf War and remain hidden.

Chemical

The Iraqi chemical warfare program was highly developed, and its capabilities used extensively by Baghdad during the Iran-Iraq War. It is likely that Iraq still has a residual production capability, despite the damage done to its production facilities by the Gulf War, follow-on UN inspections, and forced destruction of weaponized agents. It is likely that Iraq was able to conceal and disperse some of its weaponized stock, as well as production equipment.

Offensive Chemical Warfare (CW) Capability

Although a large portion of Iraq's CW stockpile has been destroyed in accordance with UN Resolution 687, it is possible that the Iraqis retain a small offensive CW capability. Prior to Operation DESERT STORM, Iraq produced and stockpiled large quantities of the nerve agents GA (tabun), GB (sarin) and GF, and the blister agent mustard. Iraq also admitted in November 1997 that it had produced 3.9 tons of the nerve agent VX. Iraqi delivery capabilities include tube and rocket artillery, air delivered bombs, spray tanks, mortars, and modified SCUD missiles.

Offensive CW Planning

High command headquarters in Baghdad reviews offensive OPLANs for corps and above to determine whether or not to supplement them with chemical weapons planning. The command headquarters may recommend implementation of the CW plan when they assess fire support or force size as sufficient to attain the objective. Saddam Hussein makes the ultimate decision to deploy and use chemical weapons. Once he gives authorization for chemical weapons use, the chemical munitions are transferred to the appropriate airfield or corps artillery site.

CW Defense Capability

Iraqi forces are equipped to operate in a CW environment. Republican Guard forces are typically better equipped than regular units. The Iraqi inventory includes a mix of protective masks imported from Eastern European countries as well as masks produced in Iraq. Protective suits are less common and are typically a plastic or rubber cape-design. Some armored vehicles have collective protection filters.

TACTICAL USE OF FLAME AND SMOKE

Smoke obscures and blocks all visual observation. Smoke is used to hide vital targets from view, and protect and secure maneuver capability by obstructing enemy vision and observation. In depriving the enemy of battlefield observation, the effectiveness of his firepower is greatly reduced.

He is forced to expend huge quantities of ammunition on false targets. When the following obscurant systems are employed in accordance with Iraqi doctrine, the clouds created may be effective against SMART weapons systems night vision devices, and laser rangefinders.

Smoke Hand Grenades

Smoke grenades are used by the Iraqi army to deceive the enemy and inhibit his ability to observe potential targets, frontline positions, and maneuver units. Two types of smoke grenades are employed by the army: one emits white smoke and another black smoke. Either black or white smoke is used to provide small-unit smokescreens to blind opposing forces while covering small-scale maneuvers. Black smoke grenades can be deceptively used to imitate fires in tanks, vehicles, and various materials. The most common smoke grenades in the Iraqi service are rifle grenades fired from the FAZ rifle.

Mortar and Artillery

Mortar and artillery smoke ammunition is the primary method used to inhibit the view of the enemy. Shells are used to blind observation posts, independent targets, or strong positions on the frontline.

The main material used in the artillery shell is white phosphorous. When the shell explodes, fragments of burning phosphorous scatter while forming heavy amounts of smoke. Smoke shells exploding in front of and around the target effectively isolate and block the area from enemy view.

Aircraft Smoke Bombs

Phosphorous bombs with a smoke-emitting capability can effectively blind the enemy and screen the movements of frontline maneuver units. Aircraft dropping 12 bombs can produce a screen up to 3,500 meters long and 300 meters wide for up to 15 minutes in average weather.

Tanks

Tanks can produce smokescreens by using a portion of their fuel. Fuel evaporates when it goes through the hot tube. When it reaches the outside, it condenses as smoke. In average weather situations, a tank can produce a smoke screen up to 400 meters long and 50 meters wide. No more than 100 liters of fuel is used for this purpose.

ELECTRONIC WARFARE (EW)

Iraq has a sophisticated EW warfare capability. Its collection and jamming capability includes an assortment of older Soviet equipment and more advanced Western systems. Their capability includes both ground based and airborne systems.

Targeted against both communications and noncommunications systems, the Iraqi SIGINT/EW structure includes three separate organizations under the control of the civilian government, the army, and the air force, respectively. Their capabilities are arrayed at both strategic and tactical levels.

Concept

Iraqi EW units have the mission to intercept, analyze, manipulate, suppress, or prevent the enemy's use of the electromagnetic spectrum while protecting Iraq's own abilities to exploit it to their own advantage.

Iraqi use of EW against tactical ground communications stresses collection and direction finding for intelligence purposes over disruption of enemy communications.

Iraq's EW concept is probably based on Soviet Radio Electronic Combat (REC) doctrine. However, Iraq's EW structure is unique to its own priorities, needs, and equipment capabilities.

Highly centralized control and reporting procedures delay the dissemination of generally excellent intelligence to frontline units.

Target Priorities

Artillery units, brigade and higher headquarters, and special forces are likely objectives of EW targeting.

Jamming

Jamming priorities are likely to be artillery nets and rear echelon communications nets.

IRAQI RSTA

Iraq's reconnaissance/intelligence capability is limited. While they have some sophisticated RSTA systems, their capability to doctrinally employ and maintain the RSTA systems is poor. Lack of adequate integration of RSTA to the combat arms is also a liability. The continuing arms sanctions has precluded Iraq from acquiring large numbers of high technology RSTA systems. Iraq is equipped with a mix of both older former Soviet and more modern Western reconnaissance/intelligence systems.

In the area of electro-optics, Iraq has both active infrared and passive image intensifier devices which can be used for night-time operations. Iraq's ability to conduct night time operations, however, is poor. These image intensifier systems are functionally similar to the US PVS-4 and PVS-5 devices. Such devices are outfitted to Iraqi tanks and infantry weapons. Iraq probably has thermal imaging systems which would potentially allow enhanced target acquisition at night or during certain daytime restricted visibility conditions. Iraq also has laser rangefinders which could be used for determining range to the target.

Artillery sound ranging systems similar to the US TNS-10 cannot be used by the Iraqis to locate U.S. tubed artillery but could be used to locate MLRS or Patriot.

Iraq has several types of battlefield radars including battlefield surveillance (functionally similar to the PPS-15) and countermortar radars (functionally similar to the US FIREFINDER).

Iraq still has a limited aerial reconnaissance capability comprising primarily photographic sensors. Iraq may employ unmanned aerial vehicles (UAVs) functionally similar to those that have been used by Israel.

Electro-Optics

A laser rangefinder ranges by directing a short pulse of laser light at a target. The light is then reflected off the object. This light reflection (or "return") is registered by a detection device on the rangefinder. Electronic circuitry determines the distance by timing the light pulse's travel to and from the object.

The lasers used in these devices are usually of relatively low energies and can be mounted on several different platforms: e.g., hand-held, tripods, armor, and rotary fixed-wing aircraft. They can, and often are, integrated into larger fire-control systems. Most currently fielded rangefinders contain a laser that is based on neodymium-doped yttrium aluminum garnet (Nd:YAG) technology. This laser produces coherent light at a wavelength of 1.06 m. This 1.06 um light can not be seen by the unaided eye, but does focus on the retina, posing some ocular hazard. Although the pulse energy is usually of low energy (usually tens of millijoules), these lasers should be handled with much caution in order to avoid an injury that could impair one's vision.

Because Iraq imports such great numbers of laser devices, it is assessed that they do not have an indigenous laser production capability. Several Slovenian and Chinese military laser systems were confiscated from Iraq after DESERT STORM, a few of which are listed in the following table:

Nomenclature	Country	Wavelength micrometers	Pulse Energy (mJ)[1]	Range (km[2], maximum)	Application
OMU-2	Slovenia	1.06		30	Artillery
TLMD	Slovenia	1.06	90	10	Tank
RLD-3	Slovenia	1.06		20	Artillery
TLR1A	China	1.06	30	3	Tank

Note: [1]mJ=millijoule; [2]km=kilometer

DECEPTION

Surprise is considered a key element of Iraqi doctrine. Preparation and dissemination of deception plans is identified as a responsibility of the GHQ during the preparation and deployment phase of offensive operations in Iraqi doctrine.

Operations Security (OPSEC)

Iraqi forces are aware of their vulnerability to enemy collection systems. OPSEC measures can be expected to increase as more tactical commanders are made conscious of their exposure to this collection.

The use of landline and reduced communications in the defense is common to many doctrines, as is going to radio-listening silence prior to an attack.

Air Defense

Concepts and Principles

The Iraqi air defense force is subordinate to both the air force and the army air defense force, who report to GHQ.

The controlling headquarters for army air defense is the air defense artillery (or anti-aircraft) directorate at GHQ. The air defense artillery directorate coordinates all training and assignment policies, as well as integrates army and air force assets. Some air defense battalions are directly subordinate to the GHQ. Each corps-level organization probably has an air defense headquarters, and a number of additional units with which to support subordinate forces. Within the division, all air defense assets are controlled by division air defense. The structure of air defense units is not standard throughout the army, and the number and types of units vary greatly.

Mission

The mission of the Iraqi air defense force is to defend Iraqi territory and airspace against hostile aircraft intrusions through the coordinated

employment of the early warning radar network, SAM systems, air defense artillery assets, and interceptor aircraft.

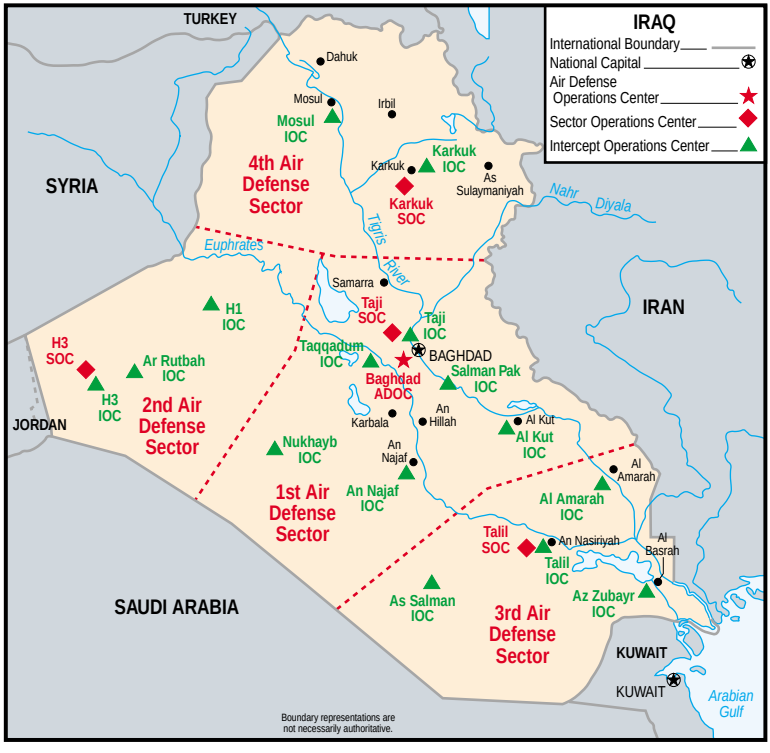
Organization of Strategic Air Defense

Iraq's national integrated air defense system (IADS) is composed of a national air defense operations center (ADOC) in Baghdad and the following four air defense sectors:

- The 1st Air Defense Sector, also known as the Central Air Defense Sector, has a Sector Operations Center (SOC) at Taji and Intercept Operations Centers (IOCs) at Taji, Al Taqqadum, Salman Pak, Al Kut, An Najaf, and An Nukhayb.
- The 2d Air Defense Sector, also known as the Western Air Defense Sector, has a SOC at H-3 Airfield, with IOCs at H-1 Airfield, H-3 Airfield, and Ar Rutbah.
- The 3d Air Defense Sector, also known as the Southern Air Defense Sector, has a SOC at Talil Airfield, and its IOCs are at Talil, Al Amraah, As Salman, and Az Zubayr.
- The 4th Air Defense Sector, also known as the Northern Air Defense Sector, has an SOC in Kirkuk, with IOCs in Kirkuk and Mosul.

The Baghdad ADOC maintains the overall air picture and establishes priorities for air defense engagements. The SOCs are subordinate to the ADOC and control air defense operations in a specific geographic area. The SOCs direct the operations of Iraq's interceptor aircraft, ground-based air defense weapons systems, surveillance systems, and command, control, and communications assets. The IOCs provide local air defense control.

Iraq uses the KARI IADS, a French-supplied command, control, and communications system completed in 1986-1987. (KARI is Iraq spelled backwards in French.) KARI is a mix of technologies from different nations with uncertain integration. KARI was rapidly overwhelmed by Coalition air operations during the 1990-91 Gulf War for several reasons. First, KARI was very hierarchical, so that when the SOCs or



Air Defense Sectors

ADOC were destroyed, the IOCs were unable to operate effectively. Also, much of the communications, data processing, and software for the integrated air defenses (IADs) were not up to the task of successfully defeating a modern, Western air campaign.

Some upgrades to KARI have occurred since then despite sanctions, most notably the use of Chinese fiber optic cables to improve connectivity between various air defense nodes. These improvements prompted

the U.S. to conduct strike operations against Iraq's air defense system in February 2001.

Each air defense sector is assigned several warning and control battalions that are responsible for operating visual observer posts and air surveillance radars. For example, the 1st Air Defense Sector controls 51st and 52d Warning and Control Regiments, and possibly a third regiment as well. The 3d Air Defense Sector controls the 71st and 72d Warning and Control Regiments, along with possibly a third. (NOTE: The 71st Warning and Control Regiment is reportedly located near An Nasiriyah and the SOC at Talil, while the 72d WCR is located near Al Amarah.) The 4th Air Defense Sector controls the 81st and 82d Warning and Control Regiments. (NOTE: The 81st WCR is reportedly located near Kirkuk, while the 72d WCR is near Mosul.) Reports from these battalion-sized units are sent up the chain to the IOC, then to the SOC, then to the ADOC to maintain Iraqi awareness of the air situation.

Each air defense sector controls one or more SAM brigades that consist of a varied number of independent SA-2 and SA-3 batteries. Identified SAM brigades include the 145th SAM Brigade (subordinate to the 1st Air Defense Sector), the 146th SAM Brigade, the 147th SAM Brigade, and the 195th SAM Brigade (subordinate to the 4th Air Defense Sector).

Other air defense assets assigned to the Air Defense Sectors include antiaircraft artillery (AAA) battalions, Roland SAM units, and electronic countermeasures units.

Iraq concentrates its national air defense coverage around Baghdad and key military and strategic targets. Many of Iraq's air defense weapons were destroyed in the Gulf War and during consequent U.S. strikes enforcing the no-fly zones over northern and southern Iraq. Iraq still maintains a fair number of air defense weapons systems despite these losses.

Iraq possesses the SA-2/3/6/7/8/9/13/14/16, I-Hawk, and ROLAND I/II SAMs. Protection of strategic targets has priority over the protection of ground forces, with the exception of the Republican Guard division, who received SA-6 protection during the Iraqi invasion in 1990. Therefore, SA-6s and ROLANDs are deployed in defense of strategic installations in addition to units in the field.

SA-6 Operations

Historically, Iraqi armored divisions had an organic SA-6 regiment. Each regiment comprised five firing batteries, a main and rear headquarters, and a technical support battery. The regiment provided area air defense for the division and point air defense for division main/corps forward headquarters. The regimental headquarters were normally deployed near the division headquarters. The SA-6 batteries were deployed in a crescent pattern 2 to 15 kilometers from the division headquarters. Technical assistance and additional missiles and supplies were provided by the technical support battery. Approximately 15 missile transporters were attached to the technical support battery. This structure remains consistently the same. Iraqi SA-6s may now be a GHQ asset, deployed as the need becomes apparent.

When used to support maneuver units, SA-6s provide low-to-medium-altitude area air defense for reserve forces and/or logistics support areas. Some SA-2s may also be deployed to sites near the front. These provide high-altitude area air defense for ground force assets in the rear. Both the SA-6s and SA-2s are deployed to fixed sites and are integrated into the air and air defense force air defense network.

Corps Air Defense

Corps air defense is the responsibility of the corps air defense command. It may have one, 57-mm, radar-guided, air defense artillery battalion, probably for the protection of corps headquarters and logistics sites. It can also take control of and re-allocate air defense assets of subordinate divisions.

The primary means of air defense support for the ground forces comes from the air defense artillery weapons organic to the division, corps, and GHQ. Air defense artillery equipment has been obtained from numerous sources, primarily the Soviet Union and China. In tactical configurations, these weapons fill several roles. The 57-mm S-60, normally deployed in battalions of 36 guns, serves consistently in defense of divisional headquarters and field artillery assets. The 37-mm M1939, the ZSU-23-4, and the lighter air defense artillery weapons often deploy close to frontline elements, covering troops as well as command elements. This general mix gives the Iraqis tremendous range and volume of firepower. Unlike the Soviets, the Iraqis do not employ SAMs well forward in the offense. Air defense of the forces is primarily provided by air defense artillery assets. In the past, SAMs moved forward only after initial objectives have been secured.

Division Air Defense

Iraqi divisions often have non-standard air defense organizations probably due to the wide variety of AAA and SAM systems in the Iraqi inventory, the subordination and type of division, and task-oriented division missions.

Each division has at least one organic air defense unit and possibly an air defense staff similar to a division artillery staff. Armored and mechanized divisions have SP antiaircraft guns, SA-9 SAMs, and one 37--mm antiaircraft artillery battalion with up to 54 guns. All divisions have an undetermined number of SA-7s.

The Iraqis apply modified Soviet employment doctrine for the SA-9 and SA-13, assigning up to a battery of SA-9s and ZSU-23/4s from the division air defense commands to each of the tank and mechanized brigades for the protection of headquarters assets.

The SA-7/9/14/16s are the only SAMs currently organic to army air defense units, although some ROLAND units may also be subordinated to the army. The SA-8 and SA-13 may also be available. In tactical con-

figuration, the 57-mm S-60, 37-mm M1939, ZSU-23-4, and the lighter air defense artillery weapons often deploy close to frontline elements, covering troops, boundaries, gaps, and command elements. This general mix gives the Iraqis tremendous range and volume of firepower.

Air Defense Equipment

AAA Systems and Statistics

The types of AAA systems in the Iraqi military inventory are listed below. Nearly two-thirds of Iraq AAA guns are Soviet-built, while the remainder are Chinese-built.

Towed	Self-Propelled
12.7-mm	23-mm, ZSU-23-4
14.5-mm	57-mm, ZSU-57-2
23-mm, ZU-23/2	
37-mm, M1939/Type 74	
35-mm, Oerlikon	
57-mm, S-60	
100-mm, KS-19	

NOTE: Towed AAA systems have been mounted on a variety of vehicles.

AAA Threat to Helicopters

The minimum range figure for the S-60 represents the maximum effective range using optical sight only; the 6.5 kilometers represents the maximum effective range for radar-controlled firing operations. Helicopters can be engaged at ranges slightly greater than those indicated below, since they fly at slower speeds and altitudes than fixed-wing aircraft. In addition, inexperienced Iraqi air defense crews may attempt to engage targets outside of their doctrinal range envelopes. Although not technically considered AAA, 7.62-mm rifles and machineguns have been included to emphasize the small arms threat to rotary-wing aircraft. The threat of small arms fire must be taken seriously. Rocks, blowguns, and minor small arms fire, as proven throughout history, can

bring down the most sophisticated helicopter. The 35-mm Oerlikon SKYGUARD system is also included since some of these other highly capable systems may have been captured from the Kuwaiti military and may not have been returned to Kuwait.

Types and tactical ranges of AAA weapons follow.

Weapons	Range
57-mm (S-60)	4.0-6.5 km
37-mm (M1939/Type 74)	2.5 km
35-mm (Oerlikon-Skyguard) (Captured)	4.0 km
23-mm (ZU-23/ZSU-23-4)	2.5 km
14.5-mm (AAHMG)	1.4 km
12.5-mm (AAHMG)	1.0 km
7.62-mm (MG)	1.0 km
7.62-mm (Rifle)	0.5 km

SAM Launcher Statistics

The current SAM systems in the Iraqi military listed below, except for the ROLAND and I-HAWK, are Soviet-built.

I-HAWK* (US)	SA-3 (UR)	SA-8 (UR)	SA-14 (UR)
ROLAND (FR)	SA-6 (UR)	SA-9 (UR)	SA-16 (UR)
SA-2 (UR)	SA-7 (UR)	SA-13 (UR)	

*Captured from Kuwait and all may not have been returned.

SAM Threat to Helicopters

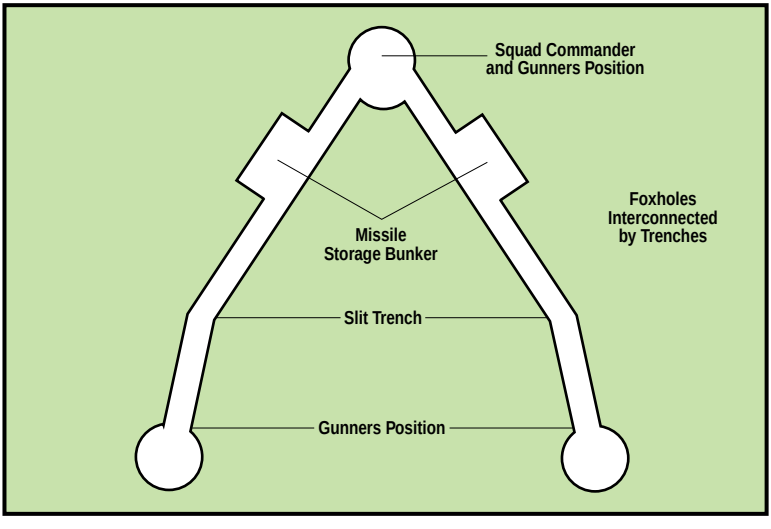
Iraq employs the ROLAND in a strategic manner as a point-defense SAM system to defend high value targets. The ASPIDE system may also be encountered since SKYGUARD was also captured in Kuwait. The SKYGUARD air defense system represents a significant threat to helicopters, since the system integrates both radar-controlled 35-mm guns and SAMs into a single fire control unit capable of quick response. The SA-6 system is associated with Republican Guard units and armored/mechanized units. As with the AAA, most SAM systems are of Soviet origin.

The tactical ranges of each SAM in the Iraqi inventory are shown below.

Weapons	Range	Weapons	Range
SA-6	24 km	SA-14	6 km
SA-7	4 km	ROLAND	8 km
SA-8	11 km	Aspide (Skyguard)	15 km
SA-9	7 km	I-Hawk	42 km
SA-13	7 km		

SA-7 Site Configuration

The Iraqis normally employ the standard Soviet SA-7 site configuration. Each site is configured as a V-shape trench with three firing positions, one at the end of each trench and another at the apex of the "V." The point of the "V" is always oriented towards the expected threat axis of approach. SA-7s configured in this manner operate in the point defense



SA-7 Site Configuration

role. In a desert environment this type of position may prove highly visible to incoming aircraft.

Helicopter Detection By Maneuver Divisions

Helicopter detection will be accomplished by early warning radars, countermortar and artillery radars, and visual observation. Visual observer teams are an integral part the Iraq air defense network. Reliability decreases tremendously as the volume of incoming aircraft increases. Training and discipline of the network detection personnel is critical, but neither consistent nor sustainable.

Air Defense Assessment

The Iraqi's SAM and AAA threat is serious, but vulnerable. Its multi-layered and overlapping coverage of strategic SAMs, tactical SAMs, and AAA guns emphasize volume of fire. AAA coverage at low altitudes presents the most serious threat. The Iraqi air defense strategy emphasizes volume of fire to force the target to fly into various air defense envelopes, and includes small arms fires directed against the target in volume.

Air Force

Organization

The Iraqi air force is primarily responsible for air-to-air combat and ground-based air defense. Having fared poorly in its air-to-ground attack role during the 8-year Persian Gulf War, ground attack and anti-submarine helicopters were transferred to a newly created army air corps in 1984. Although the air force posed a potential threat to coalition forces amassed in Saudi Arabia and surrounding states following the Iraqi invasion of Kuwait, the inability or indecision to scramble these aircraft at the outset of the air war on 17 January 1991 resulted in the destruction of many aircraft on the ground. However, some aircraft that had been stored in hardened shelters attempted to fly combat sorties in the middle stages of the air campaign. Following additional losses in air-to-air combat, nearly 140 fighter, transport, and civil air-

craft were able to cross into Iranian airspace for safe-keeping until a permanent cease-fire was agreed upon. However, as of 1997, none of the aircraft that were flown to Iran have been repatriated. Presently, units of the Iraqi Air Force are as follows:

2	bomber squadrons
6	fighter/ground attack squadrons
7	interceptor squadrons
1	reconnaissance squadron
1	fixed-wing transport squadron
1	helicopter transport squadron
Unk	training detachments
2	air defense squadrons

Personnel

The total active manpower of the Iraqi air force is approximately 30,000, including 15,000 conscripts assigned to the air defense wing. An air force reserve force is activated in times of war, and loyal reserve pilots may be retained to compensate for regular force losses.

Equipment

Iraq currently has about 300 operational aircraft, from a pre-war inventory of over 800 aircraft. Of these, only 150 can be considered modern aircraft, including the MiG-29, Mirage F-1, MiG-23, Su-20, and Su-25. The Gulf War took an incredible toll on Iraqi aircraft. What was not destroyed by Coalition forces (in the air or on the ground), or flown to Iran (115 aircraft, including most of the more advanced fighters and bombers), is languishing for lack of spare parts and proper maintenance. Current figures below reflect the best information on total inventory available, although these are approximations. It is impossible to judge how many aircraft of these totals given are unserviceable or unflyable. It is estimated that the current operational readiness rate is at 50 percent. The air force suffers from considerable shortcomings — an inadequate number of modern all-

weather interceptors, excessive reliance on vulnerable ground-controlled intercept procedures, and difficulty in ensuring adequate maintenance and spare parts. This is considerably aggravated by the nearly complete absence of trained pilots (some reports suggesting as few as 50) considered competent. Most of Iraq's long-range strike capability was eliminated when its long-range strike fighters and bombers flew to Iran in 1991.

Maintenance and training have also suffered. Prior to the Gulf War, cooperative arrangements with the Soviet Union, East Germany, and Yugoslavia for major overhauls and maintenance work satisfied Iraqi air force needs. With the embargo against Iraq still in force, these agreements have ceased. This has degraded training and readiness.

Iraq's air defense network, KARI, suffered only minor damage in the Gulf War. Much of the KARI system remains intact but has gaps in its early warning radar coverage, relies on outdated SAMs and AAA, and lacks foreign technical assistance it for maintenance. SAMs in the inventory include the SA-2/3/6/7/8/9/13/14/16. Iraq's aircraft inventory follows:

Aircraft

Bombers

5 Tu-22 BLINDER
4 Tu-16 BADGER
4 B-6D

Fighter/Ground Attack

30 Mirage F1EQ/BQ (France)
59 Su-7B/Su-20/Su-22 FITTER (Su-17)
20 Su-25 FROGFOOT
82 MiG-21 PF/MF/U/UM FISHBED
60 MiG-23 FLOGGER
20 MiG-25 FOXBAT
30 MiG-29 FULCRUM
40 F-7 (China J-7)

Aircraft

Transport

10 An-2 COLT
6 An-12 CUB
5 An-24 COKE
2 An-26 CURL
2 Il-76M/MD CANDID

As of the 28 February 1991 cease-fire, 115 Iraqi Air force aircraft were sent to Iran; they are now held as reparations of the Iran-Iraq War. Thirty-nine aircraft were lost in air-to-air combat with Coalition fighters; and 81 destroyed on the ground.

Quantities and types of Iraqi aircraft flown to Iran follow:

24 MIRAGE F1
24 Su-24 FENCER
40 Su-22 FITTER
4 Su-20 FITTER
7 Su-25 FROGFOOT
4 MiG-29 FULCRUM
7 MiG-23ML FLOGGER
4 MiG-23BN FLOGGER
1 MiG-23UB FLOGGER

Air-to-air missiles in the inventory include the AA-2 ATOLL, AA-6 ACRID, AA-7 APEX, and the AA-8 APHID from Russia and Magic R550 and Matra R530 missiles. Air-to surface missiles are the AS.30L and AM 39 EXOCET from France, and the AS-4 KITCHEN, AS-5 KELT and AS-14 KEDGE from Russia. The total number of missiles is unknown.

Major Iraqi air bases have been identified at the following locations:

Abadan	Iskandariyah	Rasheed
Amara	Jalibah	Safwan
Ar Rumaylah	Kirkuk	Saddam Airport
Baghdad	Kut Al Hayy	Shaibah
Al Basrah	Mosul	Shayka
Ghalaysan	Qalat Salih	Tallil
Habbaniyah	Qalat Sikar	Ubaydah
Hawr	Radif al Khan	Wadi Al Khirr

Although Iraq resumed operational and training flights with its fixed wing aircraft in April 1992, it has been forced by UN sanctions and financial restrictions to strictly limit flying times to about 100 sorties per day to preserve its remaining military aircraft resources. The readiness of the air force is thought to be limited, with many experienced pilots still in Iran and the operational readiness and training levels very low.

Navy

The most significant threat from the Iraqi navy is from smaller patrol boats that could be used to lay mines or harass shipping. Iraq also has a limited number of SEERSUCKER coastal defense cruise missiles.

Most of the Iraqi navy was destroyed during DESERT STORM. Of the units that remain, most are in a poor state of repair, seldom operate even for training purposes, and the crews are estimated to be in a poor state of readiness. The Iraqi navy consists of three major surface classes: an 1850-ton Class FFT, a BOGOMOL Class PC, and an OSA I Class PTG. Minor classes include: PB 90 Class PB, ZHUK Class PB, BHC SR N6 WINCHESTER Class LCPA, YEVGENYA Class MSI and NESTIN Class MSB. There are, however, numerous units of smaller patrol boat size, such as the SWARY classes. Iraq is estimated to have more than 150 of these smaller boats. Although these boats are typically the size of small to medium power/speed boats and not heavily armed, they could be used for limited mining or raiding missions.

The Iraqi Navy has about 600 personnel total. The major bases are at Khor-az-Zubayr and Umm Qasr.

APPENDIX A:
Equipment Recognition

SMALL ARMS

7.62-mm Tokarev TT-33/Type 51

Effective Range	40 m
Caliber	7.62 x 25-mm
System of Operation	Recoil, semiautomatic
Overall Length	7.68 in.
Feed Device	8-round, in-line detachable magazine
Weight	1.88 lbs

NOTE: This weapon **HAS NO SAFETY.**

9-mm Makarov

Maximum Effective Range	40 m
Caliber	9 x 18-mm
System of Operation	Recoil, semiautomatic
Overall Length	6.34 in.
Feed Device	8-round, in-line detachable magazine
Weight	1.56 lbs

9-mm Beretta M1951 (TARIQ)

Maximum Effective Range	40 m
Caliber	9 x 19-mm
System of Operation	Recoil, semiautomatic
Overall Length	203 mm.
Feed Device	8-rd detachable box magazine.
Weight	870 g.

9-mm FN 35 (Browning Hi Power)

Maximum Effective Range	40m
Caliber	9 x 19-mm
System of Operation	Recoil, semiautomatic
Overall Length	200 mm.
Magazine Capacity	13-round, detachable box magazine
Weight (Loaded)	882 g.

7.62-mm SKS/M-59

Maximum Effective Range	400 m
Caliber	7.62 x 39-mm
System of Operation	Gas, semiautomatic
Overall Length	40.16 in.
Magazine Capacity	10-round, staggered row, non-detachable box magazine
Weight (Loaded)	8.7 lbs

Using the SKS: (1) Set weapon on **SAFE** by turning the safety lever up as far as it will go. **(2)** Pull the operating handle, located on the right side of the receiver, to the rear [The bolt will lock in place]. **(3)** Insert one end of the 10-rd charger clip into the charger guide at the forward end of the bolt carrier. **(4)** Strip the rounds down into the magazine and remove empty charger clip. **(5)** Pull back on operating handle, the bolt will unlock and run forward chambering the first round. **(6)** Turn Safety down as far as it will go to **FIRE**. **(7)** **WEAPON IS READY TO FIRE**.

Field Stripping the SKS/M59

(1) Removing cleaning rod.

(2) Loosening receiver cover retaining pin.

(3) Removing receiver cover.

(4) Removing bolt and bolt carrier.

(5) Removing handguard and gas piston assembly.

(6) Unlocking trigger guard.

(7) Removing trigger group.

(8) Removing barrel and receiver.

7.62-mm AK-47/AKM/Tabuk

TABUK FAZ with the grenade sight raised (sight folds back over gas tube when not in use).

An AKM (Iraqi AK-47/AKMs can be converted to FAZ with the installation of a spigot grenade launcher);

TABUK short version.

Maximum Effective Range	400 m
Caliber	7.62 x 39-mm
System of Operation	Gas, selective-fire
Overall Length	34.25 in.
Magazine Capacity	30-rd, staggered row detachable box magazine
Weight (Loaded)	8.7 lbs

Using the AK-47/AKM: (1) Insert the 30-rd magazine into the underside of the receiver, forward end first, then draw up the rear end of the magazine until a click is heard or until the magazine catch is felt to engage. **(2)** Pull the operating handle, located on the right side of the receiver, smartly to the rear and release it [the bolt will run home and chamber a round]. **(3)** Push the safety lever from the uppermost position: **SAFE**, to the middle position: **AUTO** or all the way down to **SEMI**.
(4) WEAPON IS READY TO FIRE.
NOTE: While the AK is a heavy weapon it climbs rapidly during automatic fire.

Field Stripping the AK-47/AKM/TABUK

Loading the AK magazine

Removing the recoil spring assembly of the AK

Inserting the AK magazine

Removing the bolt carrier assembly

Removing the AK receiver cover

Removing bolt

Iraqi Rifle Grenades

M 60 AT HEAT

M 60 AP P1

M 62 Smoke/Illumination

Each 10-man regular infantry section (equivalent to a US squad) is authorized one FAZ rifle. Mechanized infantry units are authorized two FAZ rifles per 8-man section. Commando units are authorized two FAZ rifles per 10-man section.

These rifle grenades provide a multitude of capabilities to the individual rifleman similar to those of US forces provided by the 40-mm grenade family of ordnance. Filling the short-range void left by mortar systems, these grenades allow the engagement of armored targets, fortifications, transport vechicles and personnel.

Rifle Grenade Firing

Because of the tremendous recoil, the Iraqis are trained to fire rifle grenades with the butt of the weapon tucked under the arm rather than on the shoulder. This makes for an inherently less accurate system than the US M203 grenade launcher. Iraqi grenadiers generally carry four grenades of various types plus the screw-on launcher and special blank cartridges with adapters in a specially-designed pouch.

7.62-mm Dragunov SVD/Al-Kadissiya

Maximum Effective Range	1300 m
Caliber	7.62 x 54-mm
System of Operation	Gas, semiautomatic
Overall Length	48.2 in.
Magazine Capacity	10-rd, staggered row detachable box magazine
Weight (Loaded)	9.5 lbs

7.62-mm Tabuk Sniper Rifle

Maximum Effective Range	800 m
Caliber	7.62 x 39-mm
System of Operation	Gas, semiautomatic
Overall Length	48.2 in.
Magazine Capacity	10-rd, staggered row detachable box magazine
Weight (Loaded)	9.5 lbs

Using the Dragunov SVD/Al-Kadissiya or Tabuk Sniper Rifle: (1) Insert the 10-rd magazine into the underside of the receiver, forward end first, then draw up the rear end of the magazine until a click is heard or until the magazine cathc is felt to engage. **(2)** Pull the operating handle, located on the right side of the receiver, smartly to the rear and release it [the bolt will run home and chamber a round]. **(3)** Push the safety lever from the uppermost position: **SAFE**, or all the way down to **SEMI**. **(4)** **WEAPON IS READY TO FIRE**.

7.62-mm RPK/Al-Quds

Maximum Effective Range	800 m
Caliber	7.62 x 39-mm
System of Operation	Gas, selective fire
Overall Length	48.2 in.
Magazine Capacity	40-rd, staggered row detachable box magazine or 75-rd drum magazine. Can also use 30-rd AK magazine
Weight (Loaded)	1.13 kg (40-rd box) 2.1 kg (75-rd drum)

Using the RPK: (1) Insert the 30-, 40-, or 75-rd magazine or drum into the underside of the receiver, forward end first, then draw up the rear end of the magazine until a click is heard or until the magazine catch is felt to engage. **(2)** Pull the operating handle, located on the right side of the receiver, smartly to the rear and release it [the bolt will run home and chamber a round]. **(3)** Push the safety lever from the uppermost position: **SAFE**, to the middle position: **AUTO** or all the way down to **SEMI**. **(4)** **WEAPON IS READY TO FIRE**. **Bottom image is al-Quds LMG.**

7.62-mm RPD

Maximum Effective Range	800 m
Caliber	7.62 x 39-mm
System of Operation	Gas, automatic
Overall Length	40.8 in.
Magazine Capacity	100-rd metallic link belt in drum
Weight	15.6 lbs

Using the RPD: (1) Fit the drum by sliding its top dovetail to mating surfaces under receiver. **(2)** Pull operating handle to the rear [Older models will remain in place, on newer models the handle should be pushed forward after cocking]. **(3)** Open cover by pushing forward on cover latch and lifiting cover. **(4)** Lay belt on feedway so lead round lies beside cartridge stop. **WEAPON IS READY TO FIRE** **Note:** Safety is on the right side of the pistol grip: Forward **SAFE...**Rear **FIRE**

7.62-mm PK

Maximum Effective Range	800 m
Caliber	7.62 x 54-mm
System of Operation	Gas, automatic
Overall Length	47.2 in.
Magazine Capacity	100, 200, or 250-rd metallic link belt
Weight	19.8 lbs

Using the PK: (1) Open cover by pressing catch at top rear of cover. **(2)** Lay Belt in feedway, first round flush against cartridge stop. **(3)** Close cover, pull operating handle to rear. **WEAPON IS NOW READY TO FIRE.** **Note:** Safety located on receiver at rear of trigger.

12.7-mm DShK-38/Model 38/46

Maximum Effective Range	1,000 m
Caliber	12.7 x 108-mm
System of Operation	Gas, automatic
Overall Length	62.5 in
Magazine Capacity	50-rd metallic link belt
Weight w/Mount	259 lbs

Using the DShK: (1) Push forward feed latch located at top rear of feed cover and lift cover. **(2)** Place belt on revolving block so first round can be put in the upper recess of feed block. **(3)** Hold free end of belt w/right hand and press feed belt against revolving block. **(3) Rapidly rotate block w/belt as far to the right as possible. (4)** Close cover, Pull operating handle to rear until slide is engaged. **WEAPON IS READY TO FIRE. (5)** Hold both spade grips and depress trigger.

RPG-7

Maximum Effective Range	330 m (moving targets) 500 m (stationary targets)
Caliber	40-mm (launcher diameter) 85-mm (grenade)
Overall Length	1.1 m

Using the RPG: (1) Insert grenade tail first into the muzzle of the launcher **[Ensure that the small projection mates with the muzzle to line up the percussion cap with the hammer] (2)** Remove nosecap, pull safety pin. **RPG IS READY TO FIRE (3)** Place launcher over shoulder, sight target, squeeze trigger. **WARNING: ENSURE BACKBLAST AREA CLEAR.**

Al-Jaleel (M70) 60-mm Commando Mortar

Maximum Range	2,540 m.
Rate of Fire	20-25 rds/min.
Combat Weight	7.6 kg.

Iraqi Hand Grenades

RG-42
Fragmentation Grenade

F-1
Fragmentation Grenade

RGD-5
Fragmentation Grenade

RGO-78
Fragmentation Grenade

RKG-3
Antitank Grenade

No. 2
Offensive Grenade

Iraqi Mines

Iraq is known to have a vast arsenal of mines. Many of these have delay, anti-handling or otherwise sensitives fuses. **IF MINES ARE ENCOUNTERED; MARK THE AREA, MOVE AROUND AND CONTACT EOD OR COMBAT ENGINEERS. DO NOT ATTEMPT TO DISARM OR REMOVE!**

VS-50 AP Mine

Valmara 69 AP Mine

Type 72 AP Mine

TM-62M AT Mine

TMN-46M AT Mine

Other Explosive Ordinance Hazards

There is a possibility for personnel to encounter live, unexploded ordinance while in the Iraq area of operations. **THIS ORDNANCE IS LIVE AND EXTREMELY DANGEROUS! UNDER NO CIRCUMSTANCES SHOULD PERSONNEL TAMPER WITH OR DISTURB IT. MARK THE ITEM, MOVE AROUND IT, AND CONTACT EOD OR COMBAT ENGINEERS.**

BLU-91/B Landmine

Mark 116 Bomblet

BLU-97/B Bomblet

BLU-43/B Dragons Tooth Mine

T-54/55

Crew	4
Armament	1 x 100-mm D10T2S gun w/43 rds 1 x 7.62-mm SMGT coaxial w/3,500 rds 1 x 12.-7-mm DShK or NSVT antiaircraft w/ 500 rds
Maximum Speed	50 km/h
Maximum Range	460 km (650 km w/long range tanks)
Fuel Capacity	960 liters
Combat Weight	36,000 kg
Length/Width/Height	9.0 m/3.76 m/3.03 m.
Night Vision/NBC	Yes/Yes
Fording/Gradient/Vertical Obstacle/ Trench	1.4 m/60%/0.8 m/2.7 m.

RECOGNITION: 5 road wheels - no return rollers; space between 1st and 2nd road wheels; bore evacuator at end of barrel; front climbing handles on turret are straight; splash plate is straight; rear of tank chassis is straight; turret, when viewed from side, is half-egg shaped.

T-62

Crew	4
Armament	1 x 115-mm 2A20 gun w/40 rds 1 x 7.62-mm PKT coaxial MG w/2,500 rds
Maximum Speed	45.5 km/h
Maximum Range	450 km
Fuel Capacity	675 liters
Combat Weight	40,000 kg
Length/Width/Height	9.33 m/3.3 m/2.39 m.
Night Vision/NBC	yes/yes.
FordingGradient/Vertical Obstacle/ Trench	1.4 m/60%/0.8 m/2.85 m.

RECOGNITION: 5 road wheels — no return rollers; space between 3rd and 4th and 4th and 5th road wheels; bore evacuator 1/3 down from muzzle; front climbing handles on turret are curve; splash plate is straight; turret when viewed from side is rounded.

T-72

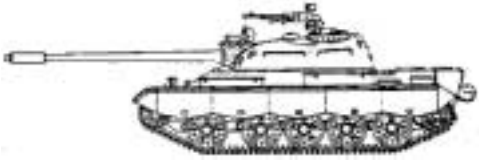
Crew	3
Armament	1 x 125-mm 2A46 w/45 rds and 6 ATGW 1 x 7.62-mm PKT MG coaxial w/2,000 rds
Maximum Speed	60 km/h
Maximum Range	480 km
Fuel Capacity	1,000 liters
Combat Weight	44,500 kg
Length/width/height	9.53 m (gun forward)/3.37 m/2.22 m.
Night Vision/NBC	yes/yes.
Fording/Gradient/Vertical Obstacle/ Trench	1.8 m/60%/0.85 m/2.8 m.

RECOGNITION: 6 road wheels — 3 return rollers; evenly spaced road wheels; bore evacuator 1/3 down from muzzle; die-cast road wheels; splash plate is V-shaped; coincidence range finder.

Chieftain (Khalid)

Crew	3
Armament	1 x 125-mm smoothbore gun w/39 rds 1 x 7.62-mm coaxial MG 1 x 12.7-mm Antiaircraft MG
Maximum Speed	62 km/h
Maximum Range	400 km
Combat Weight	48,000 kg
Length	6.9 m (gun forward)
Width	3.4 m
Height	2.3 m
Night Vision	yes
NBC	yes
Gradient	50%
Vertical Obstacle	0.85 m
Trench	3 m

Type 69-II



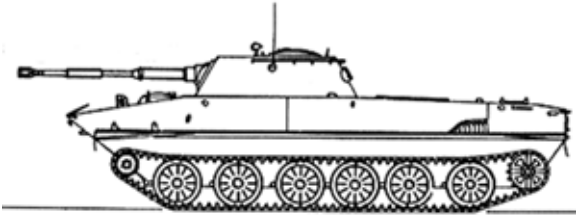
Crew	4
Armament	1 x 100-mm gun w/44 rds 1 x 7.62-mm coaxial 1 x 12/7-mm AA MG
Maximum Speed	50 km/h
Maximum Range	440 km
Length	8.6 m (gun fwd)
Width	3.3 m
Height	2.807 m
Combat Weight	36,700 kg
Night Vision	yes
NBC	yes
Fording	1.4 m
Gradient	60%
Vertical Obstacle	0.8 m
Trench	2.7 m

NOTE: The Iraqis call this tank the T-55B.

Type 59

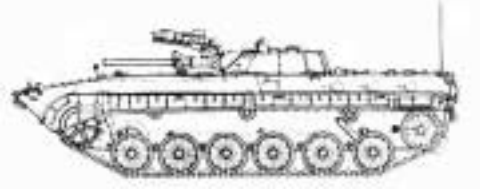
Crew	4
Armament	1 x 100-mm Type 59 rifled gun w/34 rds 1 x 7.62-mm coaxial MG 1 x 7.62-mm bow MG 1 x 12.7-mm AA MG
Maximum Speed	50 km/h
Maximum Range	440 km
Combat Weight	36,000 kg
Night Vision	yes
NBC	yes
Fording	1.4 m
Gradient	60%
Vertical Obstacle	0.79 m
Trench	2.7 m

PT-76



Crew	3
Armament	1 x 76-mm gun 1 x 7.62-mm coaxial MG w/2,000 rds
Maximum Speed	44 km/h
Maximum Range	370 km
Fuel Capacity	380 liters
Combat Weight	14,300 kg
Length	7.62 m
Width	3.14 m
Height	2.25 m
Night Vision	yes
NBC	yes
Fording	amphibious
Gradient	60%
Vertical Obstacle	1.1 m
Trench	2.8 m

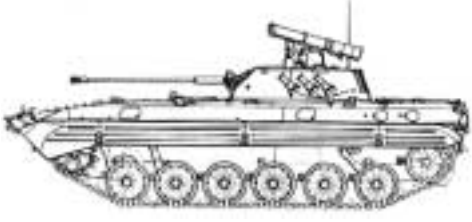
BMP-1



Crew/Passengers	3 + 8
Type	tracked
Armament	1 x 73-mm 2A28 low velocity gun w/40 rds 1 x 7.62-mm PKT MG coaxial w/2,000 rds 5 x Sagger ATGM
Maximum Speed	65 km/h
Maximum Range	600 km
Fuel Capacity	460 liters
Combat Weight	13,500 kg
Length/width.height	6.74 m2.94 m/2.15 m.
Night Vision/NBC	yes/yes
Fording/gradient/vertical obstacle/trench	amphibious/60%/0.8 m/2.2 m.

RECOGNITION: Six road wheels - three return rollers; sloping front glacis with raised horizontal ribbing; two bulging rear troop doors; centrally located, flattened conical turret; exposed Sagger launch rail mounted above gun.

BMP-2



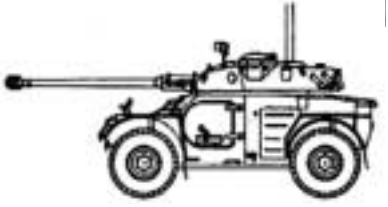
Crew/Passengers	3 + 7
Type	tracked
Armament	1 x 30-mm 2A42 gun w/500 rds 1 x 7.62-mm PKT MG w/2,000 rds 1 x 30-mm AG-17 grenade launcher w/350 rds 1 x AT-5 launcher w/4 rds
Maximum Speed	65 km/h
Maximum Range	600 km
Fuel Capacity	462 liter
Combat Weight	14,300 kg
Length/width/height	6.73 m/3.15 m/2.45 m.
Night Vision/NBC	yes/yes.
Fording/gradient/verticl obstacle/trench	amphibious/60%/0.7 m/2.5 m.

BMD-1

Crew/Passengers	3 + 7
Type	tracked
Armament	1 x 73-mm 2A28 [low-pressure] gun w/40 rds 1 x 7.62-mm coaxial PKT MG w/2,000 rds 1 x Sagger launch rail w/5 ATGMs
Maximum Speed	45 km/h
Maximum Range	600 km
Night Vision	yes
NBC	yes
Fording/Gradient/Vertical Obstacle/Trench	amphibious...60%...1.1 m...2.8 m

RECOGNITION:
Hull: Pointed nose with almost horizontal ribbed glacis plate; driver position front left; commander's cupola behind driver; 2 bulging rear doors; 4 firing ports on each side of hull and 3 on each rear door.
Armament: 73-mm gun; 7.62-mm coax MG; ATGM launch rail over main gun.
Turret: Circular with well-sloped sides mounted slightly to rear of vehicle center.
Suspension: Six road wheels; Drive sprocket front; idler rear; three track-return rollers; upper part of track covered by skirt.

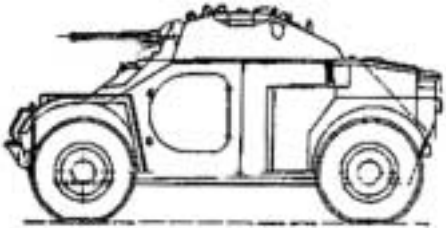
AML-90 Reconnaissance Vehicle



Crew	3
Configuration	4 x 4
Armament	1 x 90-mm gun w/20 rds 1 x 7.62-mm MG w/2,000 rds 2 x 2 smoke grenade dischargers w/12 grenades
Armor	8 to 12 mm
Night Vision	Optional
NBC Capable	Optional
Maximum Road Range/speed	600 km/ 90 KM/h
Fuel Capacity	156 liters
Fording	1.1 m (without preparation), amphibious (w/kit)
Gradient	60%
Height	2.07 m
Length	5.11 m (gun forward)
Width	1.97 m

NOTE: The all-welded steel hull of the AML-90 is divided into three compartments: driving at the front, fighting in the center, and engine in the rear. The two-man-turret is in the center of the vehicle and the 90-mm gun fires HEAT, HE, smoke, and canister rounds.

AML-60/7



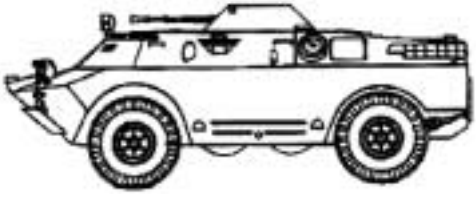
Crew	3
Armament	60 mm mortar,7.62-mm MG
Armor	8 to 12 mm
Night Vision	600 km
NBC Capable	5,500 kg
Maximum Road Range	600 km
Maximum Road Speed	90 km/h
Fuel Capacity	156 liters
Fording	1.1 m
Gradient	60%
Vertical Obstacle	0.3 M
Trench	0.8 M
Combat Weight	5,500 kg
Height	2.07 m
Length	3.79 mm (gun forward)
Width	1.97 m

EE-9 Cascavel

Crew/Passengers	3.
Type	6 x 6.
Armament	1 x 90-mm gun w/44 rds. 1 x 7.62-mm MG w/2,200 rds.
Maximum Speed	100 km/h (road).
Maximum Range	880 km/h (road).
Combat Weight	13,400 kg.
Length	6.2 m (gun forward).
Width	2.64 m.
Height	2.68 m (commander's cupola).

NOTE: The Iraqis also call this vehicle the Tigris.

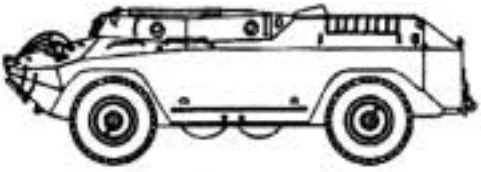
BRDM-2



Crew/Passengers	4
Type	4 x 4
Armament	1 x 14.5-mm KPVT w/500 rds 1 x 7.62-mm PKVT w/2000 rds
Maximum Speed	100 km/h
Maximum Range	750 km
Fuel Capacity	290 liters
Combat Weight	7,000 kg
Length/width/height	5.75 m/2.35 m/2.31 m.
Night Vision/NBC	yes/yes
Fordinggradient/vertical obstacle/trench	amphibious/60%/0.4 m/1.25 m.

RECOGNITION: 2-axle, 4-wheel vehicle with 4 belly wheels; conical turret centered on superstructure; superstructure slopes downward towards rear; vision blocks on both sides of superstructure; teardrop-shaped hydrojet cover on rear.
NOTE: Some Iraqi BRDM-2s may have mounted a 23mm cannon instead of the 14.5mm MG.

OT-65



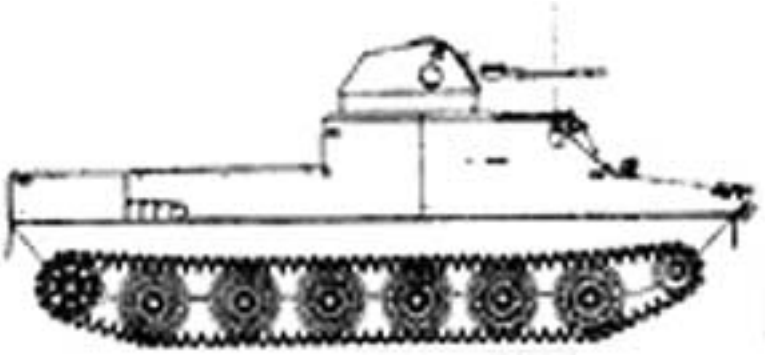
Crew	2-4.
Type	4 x 4.
Armament	1 x 7.62-mm MG w/1,250 rds.
Maximum Speed	87 km/h (road).
Maximum Range	600 km/h (road).
Combat Weight	7,000 kg.
Length	5.79 m.
Width	2.5 m.
Height	2.25 m.

M113A1

Crew/Passengers	2 + 11
Type	Tracked
Armament	1 x 12.7-mm AA MG
Maximum Speed	58 km/h
Maximum Range	480 km
Fuel Capacity	360 liters
Combat Weight	12,094 kg
Length	4.92 m
Width	3.11 m
Height	2.52 m
Night Vision	yes
NBC	yes
Fording	amphibious
Gradient	60%
Vertical Obstacle	0.61 m
Trench	1.68 m

RECOGNITION: Five road wheels, no track return rollers; front glacis inclined to rear; box-like appearance .

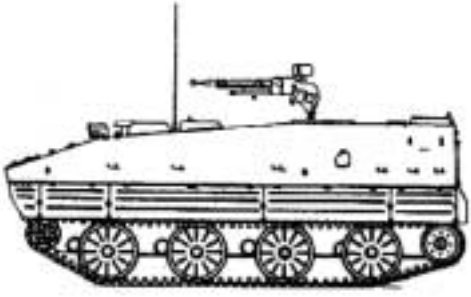
OT-62C



Crew	2 + 18
Configuration	Tracked
Armament	
Main	1 x 14.5-mm KPVT MG w/500 rds
Coaxial	1 x 7.62-mm PKT MG w/2,000 rds
Smoke	Diesel fuel injected into the exhaust system
Armor	6 to 10 mm
Night Vision	1 x 14.5-mm MG
NBC Capable	1 x 7.62-mm MG
Maximum Road Speed	500 rds
Fuel Capacity	417 liters
Fording	Amphibious
Gradient	65%
Vertical Obstacle	1.1 m
Combat Weight	15,000 kg
Height	2.23 m
Length	7.08 m
Width	3.14 m

COMMENTS: The hull is all-welded steel with the crew compartment in the front and the engine compartment at the rear. Troops enter or leave by the large door either side of the vehicle which also has a circular firing/observation port. There is an additional firing port in front of the side door on each side of hull. The engine is immediately behind the troop compartment with the cooling system on the left, fuel and oil tanks are on the right. This vehicle has six roadwheels.

Type 531/Type 63



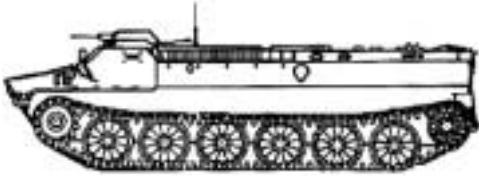
Crew/Passengers	2 + 13
Type	Tracked
Armament	1 x 12.7-mm MG
Maximum Speed	66 km/h
Maximum Range	500 km
Combat Weight	12,600 kg
Length	5.47 m
Width	2.97 m
Height	2.85 m
Night Vision	no
NBC	no
Fording	amphibious
Gradient	60%
Vertical Obstacle	0.6 m
Trench	2.0 m

NOTE: The Iraqis call this APC the BTR-63.

YW 701 Command Vehicle

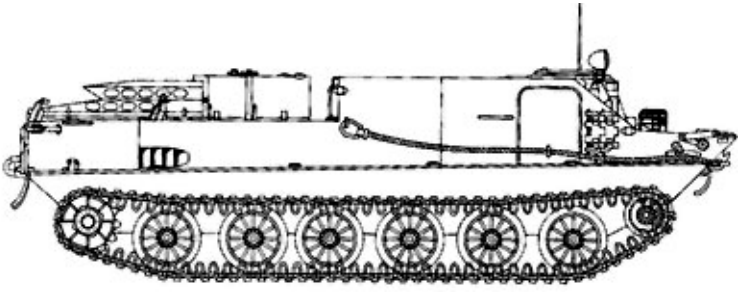
Crew/Passengers	2 + 13
Type	Tracked
Armament	1 x 12.7-mm MG
Maximum Speed	66 km/h
Maximum Range	500 km
Fuel Capacity	450 liters
Combat Weight	12,600 kg
Length	5.47 m
Width	2.97 m
Height	2.85 m
Night Vision	no
NBC	no
Fording	amphibious
Gradient	60%
Vertical Obstacle	0.6 m
Trench	2.0 m

MT-LB



Crew/Passengers	2 + 11.
Type	tracked.
Armament	1 x 7.62-mm PKT MG.
Maximum Speed	60 km/h (road).
Maximum Range	500 km.
Combat Weight	11,900 kg.
Length	6.5 m.
Width	2.9 m.
Height	1.9 m.

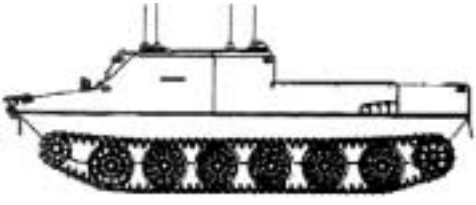
BTR-50



Crew/Passengers	2 + 14
Type	tracked
Armament	1 x 7.62-mm MG w/1,250 rds
Maximum Speed	45 km/h
Maximum Range	240 km
Night Vision	yes
NBC	yes
Fording	amphibious
Gradient	60%
Vertical Obstacle	1.1 m
Trench	2.8 m

RECOGNITION: Six road wheels - no return rollers; wedge-shaped front; lowered rear deck; full overhead armor protection; covered ports in rear for hydrojets; two firing ports in each side of hull .

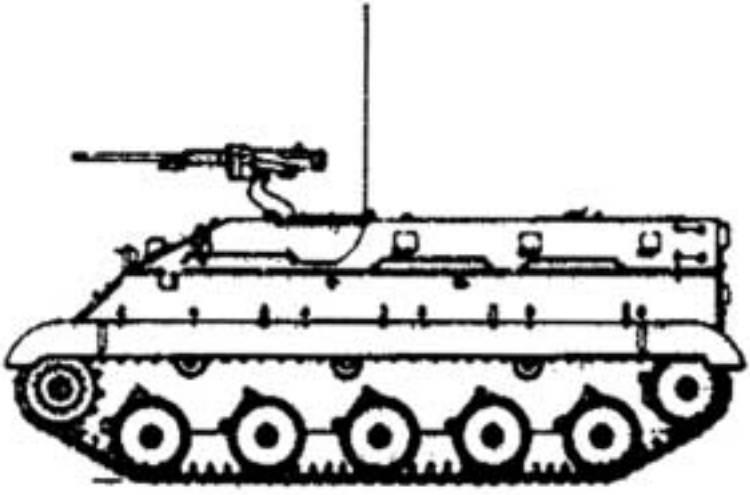
BTR-50PU Command Vehicle



Crew/Passengers	2 + 14
Type	tracked
Armament	1 x 7.62-mm MG w/1,250 rds
Maximum Speed	45 km/h
Maximum Range	240 km
Night Vision	yes
NBC	yes
Fording	amphibious
Gradient	60%
Vertical Obstacle	1.1 m
Trench	2.8 m

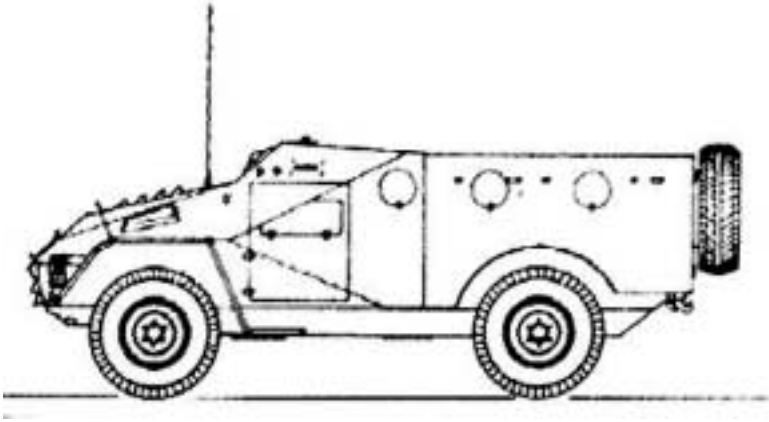
RECOGNITION: Six road wheels - no return rollers; hatches on top of troop compartment are oval-shaped and open toward center; usually has 4-5 antenna mounts; vents located atop the troop compartment.

M-60P



Crew/Passengers	3 + 10.
Type	tracked.
Armament	1 x 12.7-mm M2 HB MG (AA). 1 x 7.92-mm MG (bow).
Maximum Speed	45 km/h.
Maximum Range	400 km.
Fuel Capacity	150 liters.
Combat Weight	11,000 kg.
Length	5.02 m.
Width	2.77 m.
Height	2.385 m (including MG).
Night Vision	yes.
NBC	no.
Fording	1.35 m.
Gradient	60%.
Vertical Obstacle	0.6 m.
Trench	2 m.

BTR-40



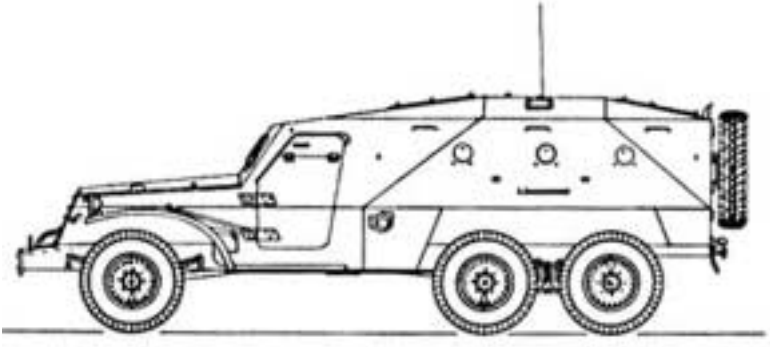
Crew/Passengers	2 + 8
Type	4 x 4
Armament	1 x 7.62-mm SGMB w/1,250 rds
Maximum Speed	80 km/h
Maximum Range	285 km
Fuel Capacity	120 liters
Combat Weight	5,300 kg
Length	5 m
Width	1.9 m
Height	1.75 m
Night Vision	no
NBC	no
Fording	0.8 m
Gradient	60%
Vertical Obstacle	0.47 m
Trench	0.7 m

OT-64C(1) APC

Crew/Passengers	2 to 15
Configuration	8 x 8
Armament	
Main	14.5-mm KPVT MG w/500 rds
Coaxial	1 x 7.62-mm PKT MG w/2,000 rds
Armor	Hull: 10mm; turret: 14 mm
NBC Capable	Yes
Night Vision	Yes
Maximum Road Speed	94.4 km/h (land) 9 km/h (water)
Fuel Capacity	330 liters
Fording	Amphibious
Gradient	60%
Vertical Obstacle	0.5 m
Combat Weight	14,500 kg
Height	2.71 m (turret top)
Length	7.44 m
Width	2.55 m

COMMENTS: The hull of the OT-64C is made of all-welded steel with the crew compartment in the front, engine behind, and the troop compartment at the rear. The one-man, manually operated turret is in the center of the vehicle. Troops enter and leave by two doors at the rear of the hull that have firing ports. The vehicle is fully amphibious and powered by two propellers mounted at the rear.

BTR-152



Crew/Passengers	2 + 17
Type	6 x 6
Armament	1 x 7.62-mm SGMB w/1,250 rds
Maximum Speed	75 km/h
Maximum Range	600 km
Fuel Capacity	300 liters
Combat Weight	8,950 kg
Length	6.55 m
Width	2.32 m
Height	2.36 m
Night Vision	no
NBC	no
Fording	0.8 m
Gradient	55%
Vertical Obstacle	0.6 m
Trench	0.69 m

BTR-60

Crew/Passengers	2 + 16
Type	8 x 8
Armament	1 x 7.62-mm PKT MG w/2,000 rds
Maximum Speed	80 km/h
Maximum Range	500 km
Fuel Capacity	290 liters
Combat Weight	10,300 kg
Length	7.56 m
Width	2.82 m
Height	2.31 m
Night Vision	yes
NBC	yes
Fording	amphibious
Gradient	60%
Vertical Obstacle	0.4 m
Trench	2 m

RECOGNITION: Six road wheels - no return rollers; wedge-shaped front; lowered rear deck; full overhead armor protection; covered ports in rear for hydrojets; two firing ports in each side of hull **.**

BTR-60 PU Command Vehicle

Crew/Passengers	2 + 9
Type	8 x 8
Armament	1 x 7.62-mm PK w/2,000 rds
Maximum Speed	80 km/h
Maximum Range	600 km
Fuel Capacity	350 liters
Combat Weight	11,500 kg
Length/width/height	7.33 m/2.8 m/2.235 m.
Night Vision/NBC	yes/yes.
Fording/gradient/vertical obstacle/trench	amphibious/60%/0.5 m/2 m.

RECOGNITION: Bent diapole antenna that runs entire length of vehicle top, has canvas roof, no turret; additional communications equipment.

EE-11 Urutu

Crew/Passengers	3 + 10.
Type	6 x 6.
Armament	1 x 12.7-mm MG w/1,000 rds.
Maximum Speed	100 km/h (road).
Maximum Range	850 km/h (road).
Combat Weight	14,000 kg.
Length	6.1 m.
Width	2.65 m.
Height	2.125 m (hull top).

NOTE: Iraqis also call this APC the Euphrates.

Panhard M3

Crew/Passengers	2 + 10
Configuration	4 x 4
Armament	12.7-mm MG 7.62-mm MG
Armor	8 to 12-mm
Night Vision	Optional
NBC Capable	No
Maximum Road Range	600 km
Maximum Speed	90 km/h
Fuel Capacity	165 liters
Fording	Amphibious
Gradient	60%
Vertical Obstacle	0.3 m
Trench	0.8 m
Combat Weight	6,100 kg
Height	2 m (hull top)
Length	4.45 m
Width	2.4 m

ARTILLERY

D-48 85-mm AT Gun

Crew	6.
Maximum Range	18,970 m.
Rate of Fire	15 rds/min (maximum).
Combat Weight	2,350 kg.

MT-12 100-mm AT Gun

Crew	6.
Maximum Range	3,000 m (APFSDS); 5,955 m (HEAT); 8,200 m (HE).
Rate of Fire	14 rds/min (maximum).
Combat Weight	3,050 kg.
Length	9.65 m (travelling).
Width	2.31 m (travelling).
Height	1.6 m (travelling).
Prime Mover	6 x 6 truck or artillery tractor.

M1977 100-mm

Crew	8.
Maximum Range	20,700 m (HE-FRAG); 2,200 m (HEAT).
Rate of Fire	8-10 rds/min.
Combat Weight	3,200 kg.

M40A1 106-mm RCL

Crew	3
Maximum Range	3,000 m (HEAT)
Rate of Fire	1 rd/min
Combat Weight	209.5 kg
Prime Mover	4 x 4

SPG-9 73-mm

Crew	3
Maximum Range	4,500 m (indirect) 1,300 m (direct)
Rate of Fire	2 rds/min
Combat Weight	45 kg
Length	2.11 m

AT-3 SAGGER

Type	Wire-guided MCLOS system
Warhead	2.6 kg, HEAT, piezoelectric fuze
Range	500 m (minimum), 3,000 m (maximum)
Armor Penetration	>400 mm
Propulsion	Two solid fuel rocket motors
Flight Velocity	115-120 m/sec
Weight	10.9 kg at launch
Length	860 mm
Diameter	125 mm

COMMENTS: The AT-3 SAGGER is the most widely proliferated and long lived of all antitank guided missile systems. It can be fired from a variety of launch platforms. The MCLOS AT-3 includes the man-portable suitcase and light mounted versions. The system may also be deployed in limited numbers on helicopters. Top picture is SAGGER launchers on a BRDM-2; bottom picture is man-portable suitcase.
RECOGNITION: Manpack, BRDM-1, BRDM-2, BMP, BMD, OT-64/SKOT, BOV-1, Mi-2 HOPLITE Mi-8 HIP-F; guide-rail launched; short cylindrical body; blunt conical nose; four tail fins; two clusters of three missiles in BRDM-1 mount.

AT-4 SPIGOT

Type	Wire-guided SACLOS
Maximum Range	70 - 2,000 m (9M111) 70 - 2,500 m (9M111-2)
Launch Weight	12.5 kg
Armor Penetration	400 mm (9M111) 460 mm (9M111-2)

AT-5 SPANDREL

Type	Wire-guided SACLOS
Maximum Range	75 - 4,000 m
Launch Weight	14.6 kg
Armor Penetration	600 mm

NOTE: Top picture is SPANDREL mounted on a BRDM-2; bottom picture is SPANDREL ground mount.

MILAN 2 Ground Launcher

Max Range and Flight Time	2,000 m in 12.5 seconds
Night Vision Device	Thermal Imaging
Warhead Type	Unitary Shaped Charge
Warhead Penetration	1000 mm of RHA
Guidance/Command Link	SACLOS/Wire
Attack Profile	Direct LOS
Launch Platforms	Ground Tripod, Compact Turret

TOW Ground Tripod Launcher

Max Range and Flight Time	3,750 m in 20 seconds
Night Vision Device	Thermal Imager
Warhead Type	Unitary Shaped Charge
Warhead Penetration	750 mm of RHA
Guidance/Command Link	SACLOS/Wire
Attack Profile	Direct LOS

M901A2 ITV ITOW Launch Platform

Crew	4
Configuration	Tracked
Armament:	1 x TOW ATGW launcher w/12 missiles 1 x 7.62-mm MG w/2,000 rds 4 x smoke grenade dischargers
Armor	12 to 44 mm
Night Vision	Yes
NBC Capable	Yes
Maximum Road Speed	60.7 km/h
Fuel Capacity	360 liters
Fording	Amphibious
Gradient	60%
Combat Weight	11,070 kg
Height	2.91 m (launcher stowed), 3.35 m (launcher erected)
Length	4.863 m
Width	2.686 m

Comments: This antitank vehicle consists of a standard M113A1 APC with a M27 cupola mounted on the roof. On the forward part of this is an arm containing the TOW launcher assembly with two missiles. In travel, the launcher is retracted into the hull to make it harder to distinguish from standard M113s. Once the ITV has come to a halt it takes only 20 seconds to elevate launcher and engage the target.

VCR/TH (HOT)

Crew	3
Configuration	4 x 4
Armament	1 x 7.62-mm w/2,200 rds 4 x HOT missile launchers Maximum range: 4000 m. Armor penetration: 1,300 mm.
Night Vision	No
NBC Capable	No
Maximum Road Range	1,000 km
Maximum Road Speed	92 km/h
Fuel Capacity	300 liters
Fording	Amphibious
Gradient	60%
Vertical Obstacle	0.6 m
Trench	1 m
Combat Weight	13,000 kg
Height	2.94 m
Length	5.98 m
Width	2.49 m

M116 75-mm Pack Howitzer

Crew	5.
Maximum Range	8,790 m.
Rate of Fire	6 rds/min (short bursts). 3 rds/min (sustained).
Combat Weight	653 kg. (firing).
Length	3.658 m (travelling).
Width	1.194 m (travelling).
Height	0.94 m (travelling).
Prime Mover	4 x 4 truck.

D-44 85-mm Divisional Gun

Crew	8.
Maximum Range	15,650 m (maximum). 1,150 m (effective HVAP).
Rate of Fire	15-20 rds/min.
Combat Weight	1,725 kg (firing).
Length	8.34 m (travelling).
Width	1.78 m (travelling).
Height	1.42 m (travelling).
Prime Mover	6 x 6 truck.

Mk 3 25-pounder (88-mm) Field Gun

Crew	6
Maximum Range	12,250 m
Rate of Fire	5 rds/min
Combat Weight	1,800 kg (firing)
Length	7.924 m (travelling)
Width	2.12 m (travelling)
Height	1.65 m (travelling)
Prime Mover	6 x 6 truck.

M-56 105-mm Mountain Gun

Crew	7
Maximum Range	10,575 m
Rate of Fire	3 rds/min
Combat Weight	1,290 kg
Length	4.8 m
Width	2.9 m
Height	1.93 m
Prime Mover	4 x 4 truck.

M56 105-mm Howitzer

Crew	7.
Maximum Range	13,000 m.
Rate of Fire	16 rds/min.
Combat Weight	2,060 kg. (firing).
Length	5.46 m (firing).
Width	2.15 m (firing).
Height	1.56 m (travelling).
Prime Mover	4 x 4 truck.

D-30 122-mm Howitzer

Crew	7
Maximum Range	15,400 m (conventional) 21,900 m (RAP)
Rate of Fire	7 rds/min
Combat Weight	3,210 kg
Length	5.4 m
Width	1.95 m
Height	1.66 m
Prime Mover	6 x 6 truck

RECOGNITION: Double-baffle muzzle brake; boxed-section split trails; large bogies on trails; large circular firing pedestal; large shield; resembles the Soviet D-20.

Type 59-1 130-mm Field Gun

Crew	8 - 10
Maximum Range	27,150 m
Rate of Fire	10 rds/min
Combat Weight	6,300 kg
Length	10.8 m
Width	2.42 m
Height	2.75 m
Prime Mover	6 x 6 truck.

RECOGNITION: Long barrel; single baffle muzzle brake; large bogie on trails; large circular firing pedestal; small shield; no limber.

M46 130-mm Field Gun

Crew	8
Maximum Range	27,150 m
Rate of Fire	6 rds/min
Combat Weight	7,700 kg
Length	11.73 m
Width	2.45 m
Height	2.55 m
Prime Mover	6 x 6 truck.

RECOGNITION: Long barrel; pepperpot muzzle brake; large spades rest on trails; large limber used in travel; sweptback shield; towed out-of-battery.

D-20 152-mm Howitzer

Crew	10
Maximum Range	17,410 m (conventional) 24,000 m (RAP)
Rate of Fire	6 rds/min
Combat Weight	5,700 m
Length	8.69 m
Width	2.40 m
Height	1.92 m
Prime Mover	6 x 6 truck

RECOGNITION: Double-baffle muzzle brake; boxed-section split trails; large bogie wheels on trails; large circular firing pedestal; large shield; dual recoil cylinders above gun tube.

Type 66 152-mm Howitzer

Crew	10
Maximum Range	17,200 m (conventional).
Rate of Fire	2 rds/min (sustained).
Combat Weight	5,700 kg
Length	8.7 m
Width	2.4 m
Height	1.92 m
Prime Mover	6 x 6 truck

RECOGNITION: Double-baffle muzzle brake; boxed-section split trails; large bogie wheels on trails; large circular firing pedestal; large shield; dual recoil cylinders above gun tube.

Type 83 152-mm Howitzer

Crew	10.
Maximum Range	30,000 m.
Rate of Fire	3-4 rds/min.
Combat Weight	9,700 kg (firing).
Length	9.4 m (travelling).
Width	2.67 m (travellilng).
Height	1.865 m.
Prime Mover	6 x 6 truck.

M114 155-mm Howitzer

Crew	11
Maximum Range	14,600 m
Rate of Fire	40 rds/h
Combat Weight	5,760 kg
Length	7.315 m
Width	2.438 m
Height	1.803 m
Prime Mover	6 x 6 truck.

155-mm GH N-45 Gun-Howitzer

Crew	6.
Caliber	155-mm.
Maximum Range	39,600 m.
Rate of Fire	2 rds/min (sustained).
Prime Mover	6 x 6 truck.
Length	11.4 m (firing).
Weight	11,000 kg.

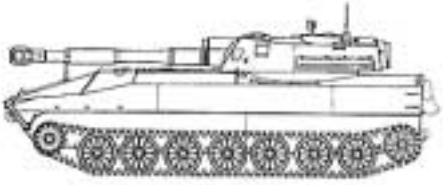
RECOGNITION: Long barrel; four road wheels; single-baffle muzzle brake; no shield; optional APU; bogie wheels on trails.

G5 155-mm Gun-Howitzer

Crew	5.
Caliber	155-mm.
Maximum Range	30,000 m (HE), 50,000 m (VLAP).
Rate of Fire	3 rds/min.
Prime Mover	6 x 6 truck.
Maximum Towing Speed	100 km/h.
Length	9.5 m (traveling).
Weight	13,750 kg.

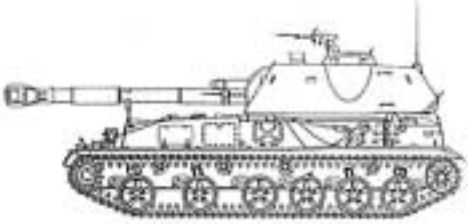
RECOGNITION: Long barrel; four road wheels; single-baffle muzzle brake; APU; no shield; Bogie wheels on trails.

2S1 122-mm SPH



Crew	4
Armament	1 x 122-mm 2A31 howitzer w/40 rds Maximum range: 15,200 m Rate of Fire: 5 rds/min
Maximum Speed	61.5 km/h
Cruising Range	500 km
Combat Weight	15,700 kg
Length	7.26 m
Width	2.85 m
Height	2.732 m
Fording	amphibious
Gradient	77%
Vertical Obstacle	0.7 m
NBC	yes
Night Vision	yes (limited range, commander and driver only)

2S3 152-mm SPH



Crew	4 (+2 in ammunition carrier)
Armament	1 x 152-mm 2A33 gun w/46 rds (42 HE and 4 HEAT) Maximum Range: 18,500 m (HE-FRAG) 24,000 m (HE-RAP)
Maximum Speed	60 km/h
Maximum Range	500 km (road) 270 km (cross-country)
Combat Weight	27,500 kg
Length	8.4 m (gun forward)
Width	3.250 m
Height	3.05 m
Fording	1.0 m
Gradient	60%
Vertical Obstacle	0.7 m
Trench	3.0 m
NBC	yes
Night Vision	yes

RECOGNITION: Six large road wheels; four return rollers; double baffle muzzle brake; one 7.62-mm machinegun.

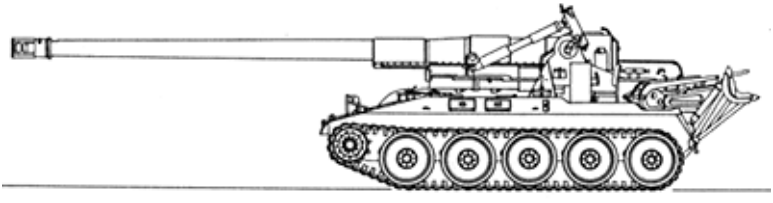
GCT 155-mm SPH

Crew	4.
Armament	1 x 155-mm gun w/42 rds. Maximum Range: 25,300 m (hollow-based HE). Rate of Fire: 8 rds/min (auto-loading); 2-3 rds/min (manual). 1 x 7.62-mm (w/2,050 rds) or 12.7-mm AA MG (w/800 rds).
Maximum Speed	60 km/h.
Maximum Range	450 km (road)
Combat Weight	42,000 kg.
Length	10.234 m (gun forward).
Width	3.15 m.
Height	3.3 m (turret top).
Fording	2.1 m.
Gradient	60%.
Vertical Obstacle	0.93 m.
NBC	yes.
Night Vision	yes.

M109/M109A1 155-mm SPH

Crew	6
Armament	1 x 155-mm M185 howitzer 1 x 12.7-mm AA MG
Maximum Speed	56.3 km/h
Maximum Range	349 km
Combat Weight	24,948 kg
Fording	1.07 m
Gradient	60%

M110203-mm SPG



Crew	5
Armament	1 x 203-mm M113 gun
Maximum Speed	56 km/h
Maximum Range	725 km
Combat Weight	28,168 kg
Fording	1.066 m
Gradient	60%

M240 240-mm Mortar

Crew	6
Maximum Range	9,700 m
Rate of Fire	1 rd/min
Length	5.34 m
Width	2.49 m
Height	2.21 m

M43 160-mm Mortar

Crew	7
Maximum Range	5,150 m
Rate of Fire	3 rds/min
Combat Weight	1,170 kg
Length	3.03 m
Width	1.77 m
Height	1.41‘4 m
Prime Mover	6 x 6 truck

Al-Jaleel 120-mm Mortar

Maximum Range	5,400 m.
Rate of Fire	5-8 rds/min.
Combat Weight	148 kg (firing position).

Al-Jaleel 82-mm Mortar

Maximum Range	4,900 m.
Rate of Fire	20-25 rds/min.
Combat Weight	63 kg (firing position).

Ababeel 50 (M-87 Orkan) MRL

Crew	5.
Armament	12 262-mm rockets.
Rate of Fire	1 rocket/2.3-4 sec
Maximum Range	50,000 m
Maximum Speed	80 km/h.
Maximum Range	600 km.
Combat Weight	32,000 kg.
Length	9.00 m.
Width	2.64 m.
Height	3.84 m.
Fording	1.2 m.
Gradient	60%.
Trench	1.8 m.

Sajeel (Astros II) MRL

SS-30	127-mm Max range: 30 km.	32 tubes.
SS-40	180-mm Max range: 35 km.	16 tubes.
SS-60	300-mm Max range: 60 km.	4 tubes.
SS-80	300-mm Max range: 90 km.	4 tubes.

BM-21 122-mm MRL

Crew	5
Armament	40 122-mm rockets Rate of fire: 40 rds/20 sec Max Range: 20,380 m Reload time: 7 min
Maximum Speed	80 km/h
Maximum Range	525 km
Fuel Capacity	340 liters
Combat Weight	10,500 kg
Length	6.9 m
Width	2.5 m
Height	2.48 m

Ababeel 100-m MRL

Armament 4 x 100-mm rocket tubes.

Type 63 107-mm MRL

Crew	5.
Armament	12 x 107-mm rocket tubes
Maximum Range	8,500 m.
Rate of Fire	12 rds/7-9 seconds.
Reload Time	3 minutes.
Combat Weight	611 kg (firing).

SCUD-B (Al-Hussein)

ABOVE: An Al-Hussein mounted on a Transporter Erector Launcher (TEL).

LEFT: An Al-Hussein in the launch position.

Type	Intermediate range, road mobile, liquid propellant, single warhead ballstic missile.
Maximum Range	630 km.
Payload	250-500 kg. HE or Chemical.
Length	12.46 m.
Width	0.88 m.

FROG-7

Type	Short-range, road-mobile, solid-propellant, single-warhead, unguided rocket.
Maximum Range	68 km.
Payload	200-457 kg HE or Chemical.
Length	9.4 m.
Width	0.54 m.

ZPU-4 (Quad) 14.5-mm

Crew	5
Maximum Range	8,000 m (horizontal) 5,000 m (vertical)
Rate of Fire (Per Barrel)	150 - 600 rds/min
Combat Weight	1,810 kg
Length	4.53 m
Width	1.72 m
Height	2.13 m

ZU-23 23-mm

Crew	4
Maximum Range	8,000 m (horizontal) 5,000 m (vertical)
Rate of Fire (Per Barrel)	150 - 600 rds/min
Combat Weight	994 kg
Length	3.536 m
Width	1.92 m
Height	1.83 m

GDF-001 35-mm

Crew	5
Maximum Range	8,000 m (horizontal) 5,000 m (vertical)
Rate of Fire (Per Barrel)	150 - 600 rds/min
Combat Weight	1,810 kg
Length	4.53 m
Width	1.72 m
Height	2.13 m

M1939 37-mm

Crew	3 - 6
Maximum Range	6,700 m (vertical) 9,900 m (horizontal)
Rate of Fire (Per Barrel)	120 rds/min
Combat Weight	2,676 kg

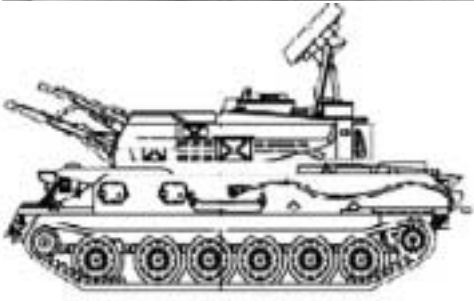
S-60 57-mm

Crew	7
Maximum Range	12,000 m (horizontal) 8,800 m (vertical)
Rate of Fire	100 - 120 rds/min
Combat Weight	4,500 kg
Length	8.6 m
Width	2.054 m
Height	2.46 m

KS-19 100-mm

Crew	15.
Maximum Range	21,000 m (horizontal). 15,400 m (vertical, proximity fuze). 14,900 m (vertical, time fuze).
Rate of Fire	15 rds/min.
Combat Weight	19,450 kg.
Length	9.238 m (travelling).
Width	2.286 m (travelling).
Height	2.201 m (travelling).

ZSU-23-4 23-mm SPAAG



Crew	4
Armament	4 x 23-mm AZP-23M cannon w/2,000 rds Maximum Range: 7,000 m (horizontal) 5,100 m (vertical) Rate of Fire per Barrel: 200 - 800 rds/min
Maximum Speed	50 km/h
Maximum Range	450 km
Combat Weight	20,500 kg
Length	6.53 m
Width	3.12 m
Height	3.57 m
Fording	1.07 m
Gradient	60%
Vertical Obstacle	1.1 m
Trench	2.8 m
NBC	yes
Night Vision	yes

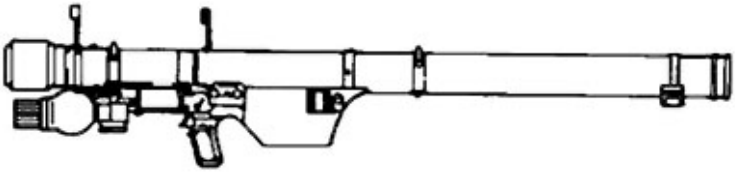
ZSU-57-2 57-mm SPAAG

Crew	6.
Armament	2 x S-68 57-mm cannon w/316 rds Maximum Range: 12,000 m (horizontal); 8,800 m (vertical). Rate of Fire: 105-120 rds/min.
Maximum Speed	50 km/h.
Maximum Range	400 km (road).
Combat Weight	28,100 kg.
Length	8.48 m (guns forward).
Width	3.27 m.
Height	2.75 m.
Fording	1.4 m.
Gradient	60%.
Vertical Obstacle	0.8 m.
Trench	2.7 m.

SA-7 GRAIL

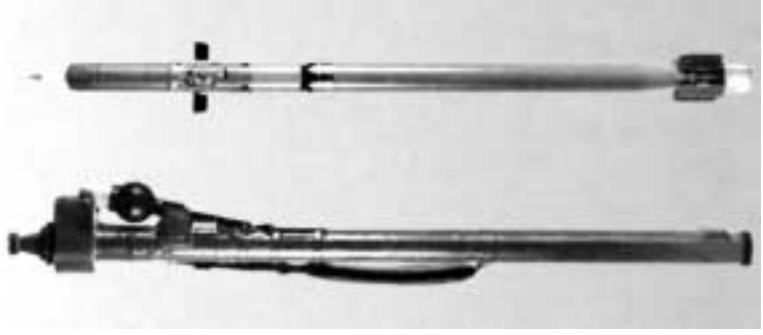
Crew	1
Maximum Range	3,200 m
Combat Weight	9.15 kg
Length	1.49 m

SA-14 GREMLIN



Guidance	Passive IR homing FM tracking logic seeker
Maximum Range	2,000 m (approaching jet) 4,500 m (approaching prop A/C or Helicopter)
Combat Weight	16 kg
Length	1.5 m

SA-16

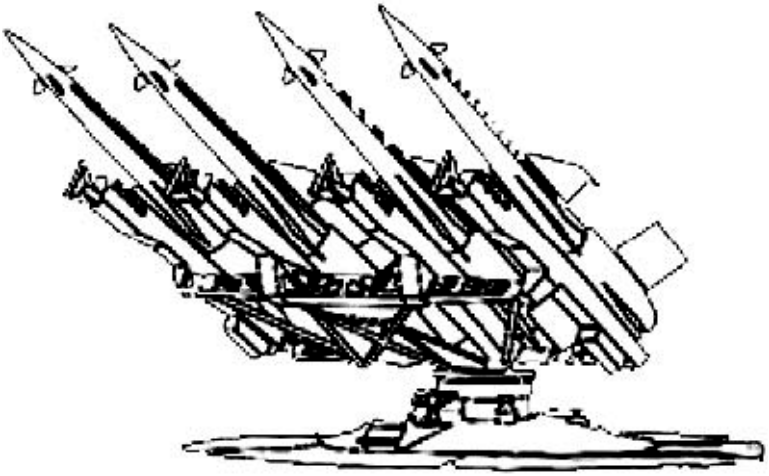


Guidance	Passive IR homing Fm tracking logic seeker
Maximum Range	4,500 m (approaching target) 5,200 m (receding target)
Combat Weight	16.65 kg
Length	1.7 m

SA-2 GUIDELINE

Maximum Range	30,000 m
Combat Weight	2,450 kg
Length	10.8 m

SA-3 GOA

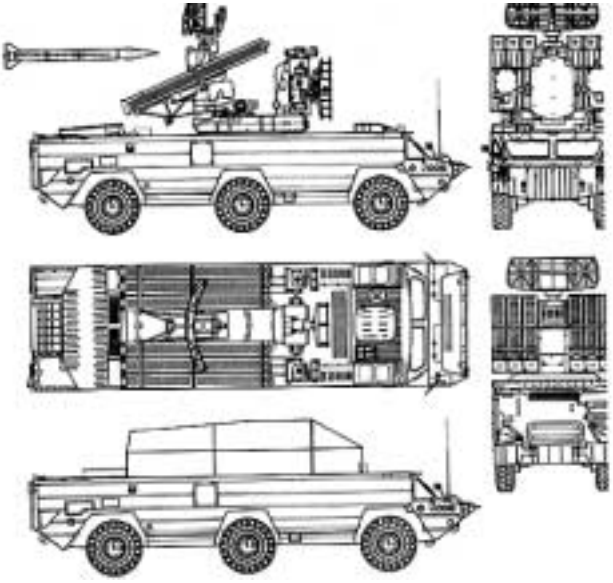


Maximum Range	25,000 m
Combat Weight	641 kg
Length	6.7 m

SA-6 GAINFUL

Type	Low to medium altitude surface to air missile
Guidance	Semi-active radar homing
Maximum Range	23,000 m
Maximum Altitude	4,000 m
Launch Weight	630 kg
Length	5.8 m

SA-8 GECKO



Type	Low altitude surface to air missile system
Guidance	Command
Maximum Range	10,000 m
Maximum Altitude	5,000 m
Launch Weight	126.3 kg
Length	3.186 m

SA-9 GASKIN

Type	Low altitude surface to air missile system
Guidance	Passive IR homing seeker
Maximum Range	4,200 m
Maximum Altitude	3,500 m
Launch Weight	30 - 30.5 kg
Length	1.803 m

FAN SONG

Function	Fire control radar.
Range	75-150 km (tracking). 43 kn (engagement).
Location	1 per SA-2 Bn; 3 per regiment.
Associated Systems	SA-2, SPOON REST or FLAT FACe early warning radar, ODD PAIR height finding radar.

RECOGNITION: Van-mounted three round dishes, one through antenna.

DOG EAR

Function	EW/acquisition.
Range	40 km.
Location	Front-line elements.
Associated Systems	SA-9 and SA-13.

RECOGNITION: Clipped parabolic antenna mounted on tracked armored vehicle.

LOW BLOW

Function	Fire control radar.
Range	80 km (tracking). 29 km (engagement).
Location	1 per missile launcher.
Associated Systems	SA-3, FLAT FACE early warning radar, SPOON REST acquisition radar, SIDE NET height finding radar.

RECOGNITION: Two trough antennas oriented 45 degrees from vertical.

FLAT FACE

Function	Mobile EW radar.
Range	210 km.
Location	Regimental rear and with tactical SAM units.
Associated Systems	SA-2, SA-3, SA-6, SA-8.

RECOGNITION: Two 6 x 2.15 meter parabolic elliptical antennas; antennas mounted on box-bodied shelter or truck; truck tows small trailer with power supply unit.

SIDE NET

Function	Supplements other EW radars in height finding role.
Range	175 km.
Location	Regimental rear.
Associated Systems	SA-2 and SA-3

RECOGNITION: Large antenna mounted on side of trailer van.

SPOON REST

Function	Mobile EW radar.
Range	200-275 km.
Location	SAM regimental rear.
Associated Systems	SA-2,SA-3 and FAN SONG.

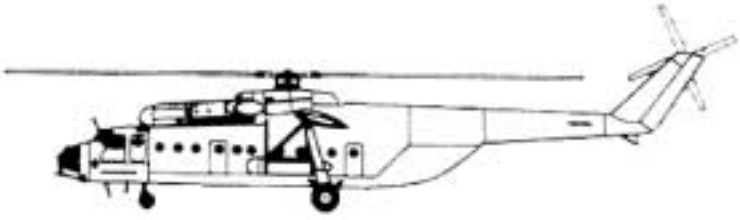
RECOGNITION: 12 Yagi array, bisecting crossbar; two trucks transport array and generator.

STRAIGHT FLUSH

Function	Fire control/acquisition.
Range	60-90 km (acquisition). 24 km (engagement).
Location	1 per SA-6 battery.
Associated Systems	SA-6, LONG TRACK and THIN SKIN acquisition radars.

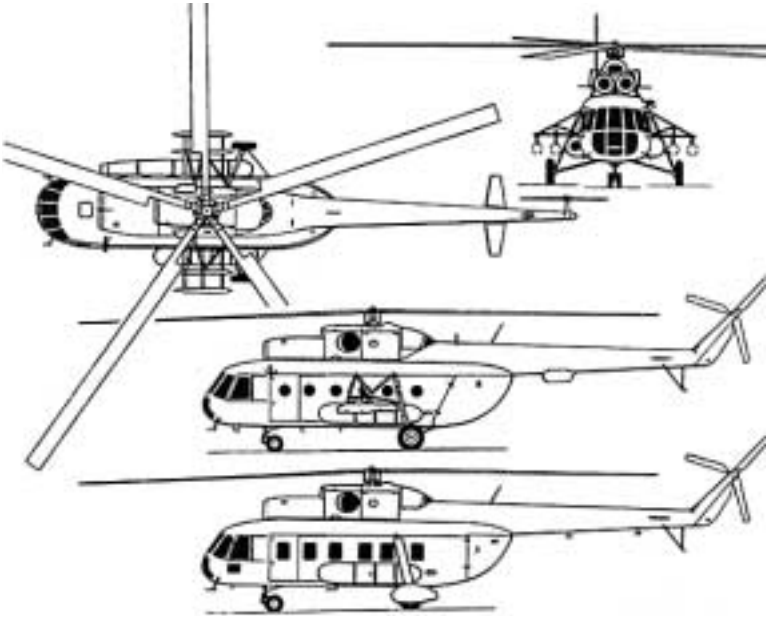
RECOGNITION: Same chassis as SA-6 TEL, 12 feet long search radar, 7 foot diameter illumination radar.

Mi-6HOOK



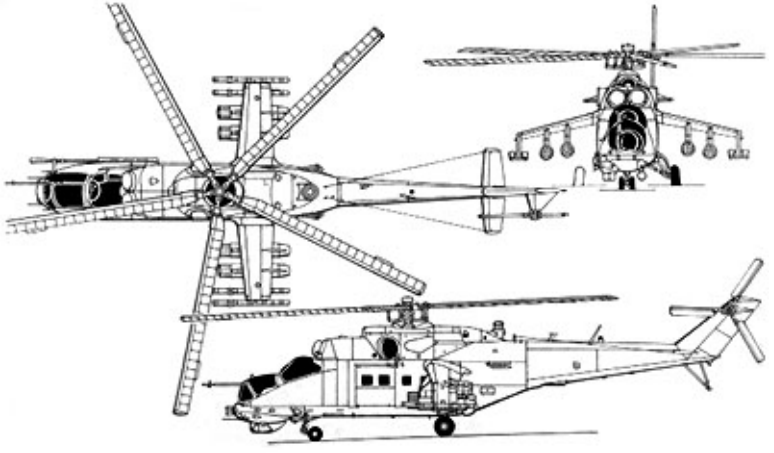
Type	Twin-turbine heavy transport helicopter
Crew	5
Armament	1 x 12.7-mm MG in nose
Payload	70 combat troops or 26,450 lb (internal) 17,637 lb (slung)
Maximum Speed	162 kts
Maximum Range	338 nm
Rotor Diameter	35 m
Length	41.74 m
Height	9.86 m

Mi-8/17 HIP



Crew	4
Armament	Assorted Rockets, Missiles, and Gun Pods
Maximum Speed	135 kts
Maximum Range	307 nm
Rotor Diameter	21.29 m m
Length	25.33 m
Height	5.54 m

Mi-24D HIND



Crew	4
Armament	1 x 4-barrel 12.7-mm MG mounted in chin turret Assorted rockets, missiles, gun pods
Maximum Speed	172 kts
Maximum Range	243 nm
Rotor Diameter	17.30 m
Length	17.51 m
Height	3.97 m

SA 316

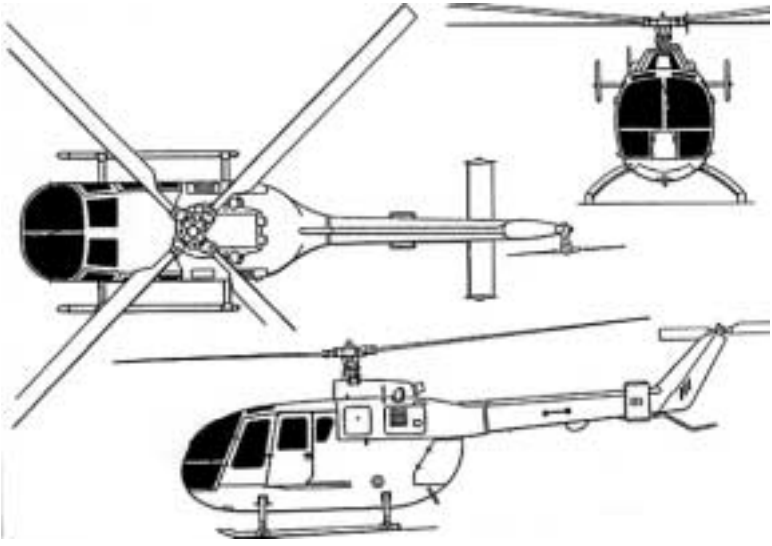
Crew	1 or 2
Armament	Assorted guns, missiles, or rockets
Maximum Speed	118 kt
Maximum Range	340 nm
Length	12.84 m

SA 330

Crew	2.
Armament	Assorted rocket, missile and MG configurations.
Maximum Cruising Speed	167 kts.
Maximum Range	491 nm.

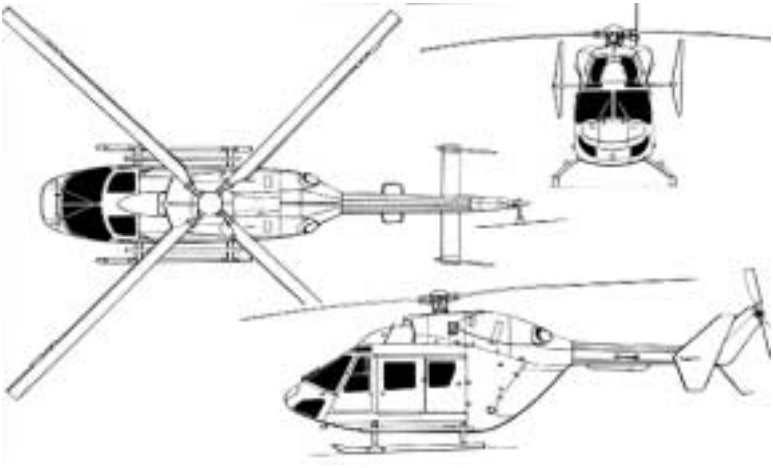
Note: Can carry two Exocet missiles.

BO 105



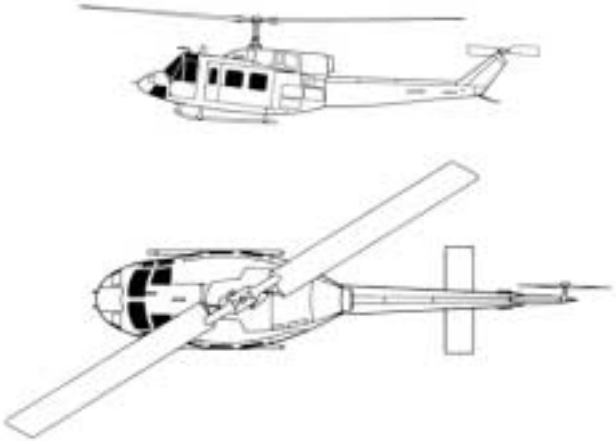
Crew	2.
Armament	Assorted rocket, missile and MG configurations.
Maximum Cruising Speed	131 kts.
Maximum Range	310 nm.

BK 117



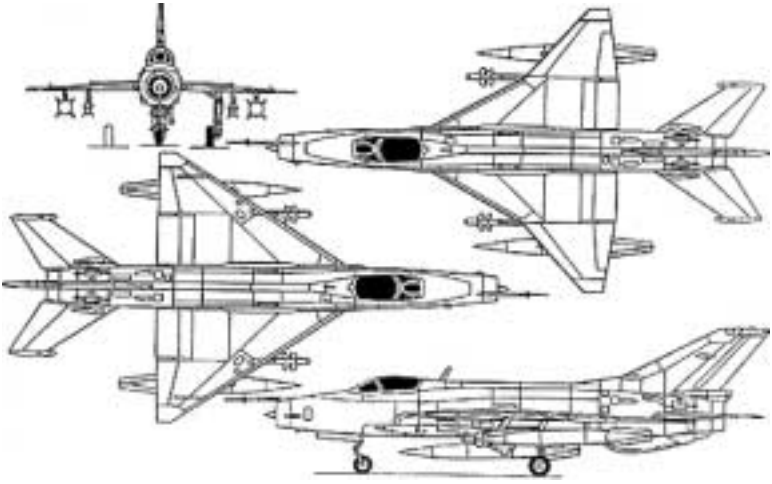
Crew	2.
Armament	Assorted rocket, missile and MG configurations.
Maximum Cruising Speed	131 kts.
Maximum Range	310 nm.

Bell 214ST



Crew	2-3.
Armament	Assorted rocket, missile and MG configurations.
Maximum Cruising Speed	138 kts.
Maximum Range	439 nm.

MiG-21/F-7



Crew	1
Armament	1 x twin-barrelled 23-mm gun in belly pak w/200-rds; assorted missiles, rockets, and/or bombs
Maximum Speed	M1.06
Maximum Range	1,100-km
Wingspan	7.15-m
Height	4.1-m
Length	15.76-m

MIG-23

Crew	1
Armament	1 x 23-mm gun Assorted rockets, missiles, or bombs
Maximum Speed	M2.35
Maximum Range	1050 nm
Wingspan	13.96 m
Height	4.82 m
Length	16.71 m

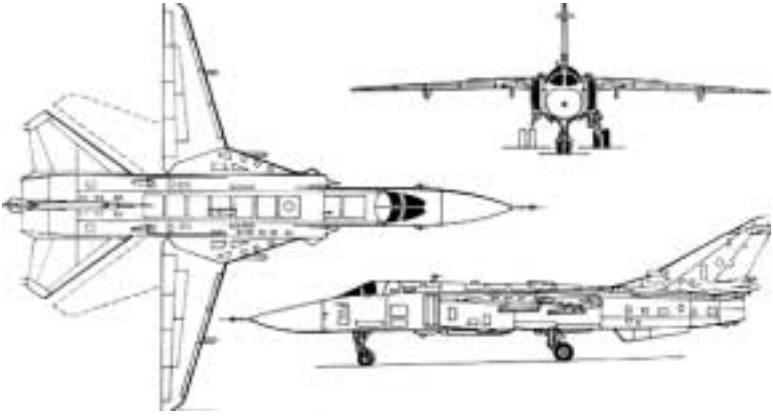
MiG-25

Crew	1
Armament	Air to Air missiles
Maximum Speed	M2.83
Maximum Range	882 nm
WIngspan	13.38 m
Height	6.50 m
Length	21.55 m

MiG-29

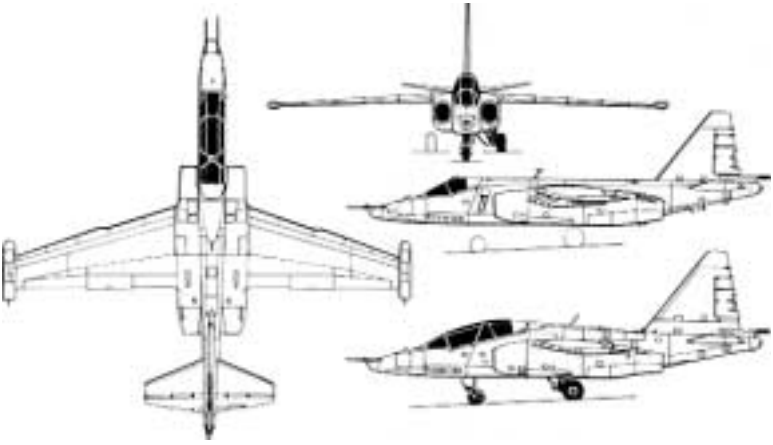
Mission	land-based single-seat counter-air tactical fighter
Armament	1 x 30-mm GSH-301 single-barrel w/150-rds (port wing root), 2,000-kg (maximum weapon load)
Maximum Range	2,900-km
Maximum Speed	mach-2.3
Maximum Rate of Climb	19,800-m/min
Weight	20,000-kg
Height	4.73-m
Length	17.32-m (including noseprobe)
WIngspan	11.36-m

SU-24



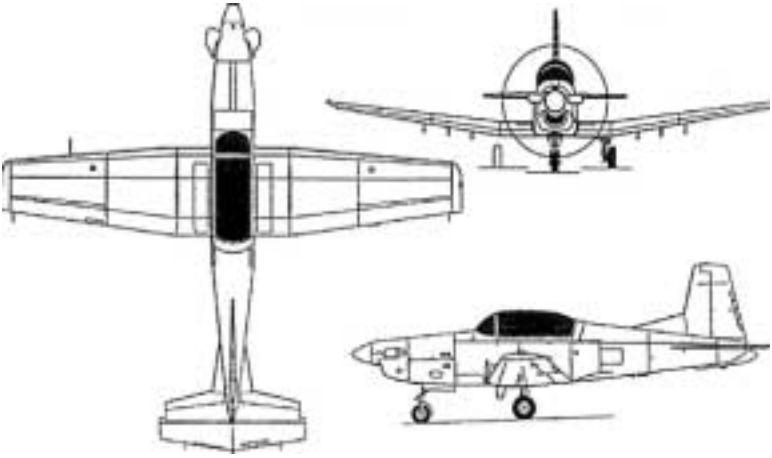
Crew	2
Armament	Assorted Air to Air missiles
Maximum Speed	M1.35
Maximum Range	174 nm
WIngspan	17.64 m
Height	5.92 m
Length	22.67 m

SU-25



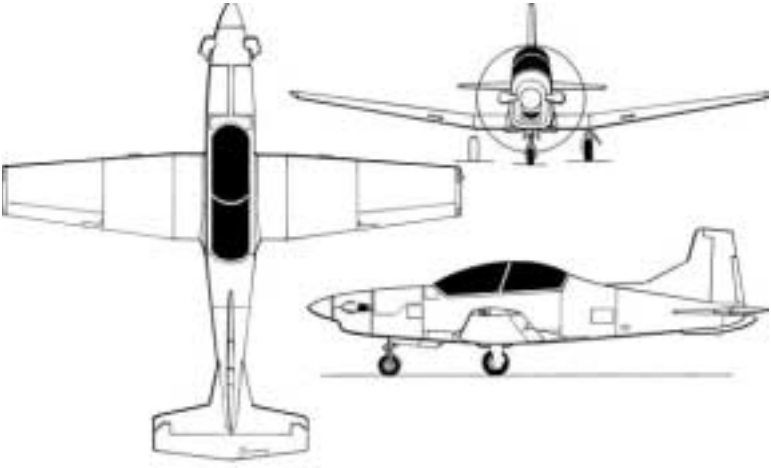
Type	Ground Attack
Crew	1
Armament	1 x twin barrel AO-17A 30-mm gun w/250 rds 4,400 kg of assorted air to ground weapons
Maximum Speed	526 kt
Maximum Range	405 km
Length	15.53 m
Wingspan	14.36 m

Pilatus PC-7



Crew	2.
Armament	Assorted Rocket, Bomb, and Machinegun configurations.
Maximum Speed	270 kts.
Maximum Range	1,200 km.
Wingspan	10.4 m.
Height	3.21 m.
Length	9.78 m.

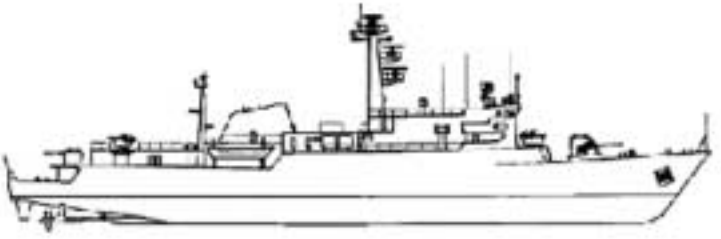
Pilatus PC-9



Crew	1.
Armament	Assorted Rocket, Bomb, and Machinegun configurations.
Maximum Speed	271 kts.
Maximum Range	830 nm.
Wingspan	10.12 m.
Height	326 m.
Length	10.14 m.

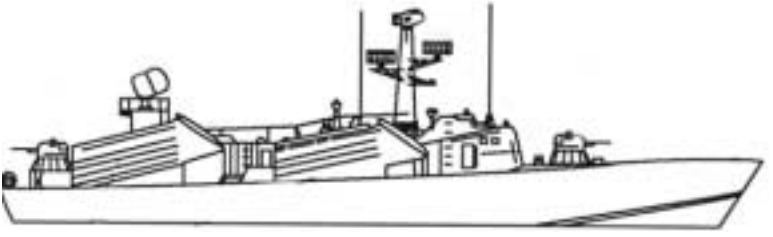
SURFACE SHIPS

1850-Ton FFT



Characteristics	Yugoslavian built; reportedly damaged during Desert Storm; One in inventory.
Armament	1 x 57-mm gun and 40-mm single-barrel. 4 x 20-mm quad-barrel (not currently mounted) Depth Charges.
Maximum Speed (kts)	27.
LOA/Beam/Draft (f)	317 x 37 x 15

OSA I-Class PTG I

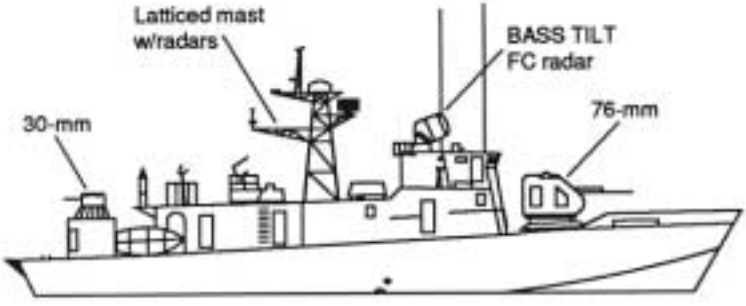


Characteristics	Transferred from former-Soviet fleet in 1970s: One in inventory, reportedly operational.
Armament	4 x SS-N-2B SSM 2 x 30-mm twin-barrel
Maximum Speed, (kts)	36.5 full power
Displacement (t)	246 fl
LOA/Beam/Draft m(f)	38.6 x 7.6 x 2.7 (126.6 x 24.9 x 8.9)

ZHUK-Class PB

Characteristics	Two in inventory.
Armament	4 x 14.5-mm MG (twin mounts)
Maximum Speed (kts)	30
LOA/Beam/Draft (f)	78.7 x 16.4 extra hull x 5.9 max

BOGOMAL-Class PC

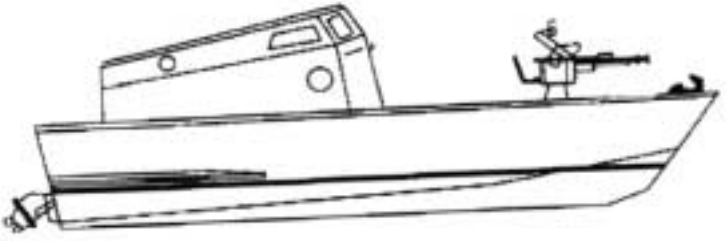


Characteristics	Russian built; reportedly operational.
Armament	1 x 76-mm. 1 x 30-mm Vulcan-type gun. SA-n-5/8 SAMs.
Maximum Speed (kts)	33 kts.
LOA/Beam/Drafy (f)	130 x 25 x 12.

PB 90 PB

Characteristics	Two in inventory.
Armament	40-mm single-barrel and 20-mm quad barrel; possible SA-N-5/8 SAMs; possible smal lmines. 2 x 47 x 57-mm 32-tube rocket pods.
Maximum Speed (kts)	25.
LOA/Beam/Draft (f)	.90 x 21.5 x 7.

11-M PB

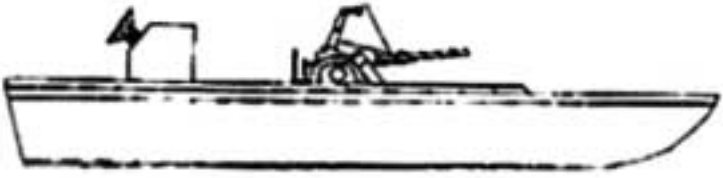


Characteristics	Numerous PBs in inventory.
Armament	1 x 12.7-mm or 14.5-mm MG. Possibly RPG-7 and/or SA-7. 2-4 small mines.
Maximum Speed (kts)	unk
LOA/Beam/Draft (f)	36 x 18 x unk.

24-M PB

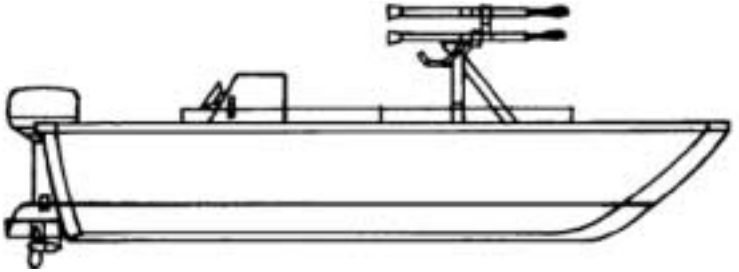
Characteristics	Numerous PBs in inventory.
Armament	1 x 23-mm twin mount or 14.5-mm quad. Possible SA-N-5-8 SAMs and 4 small mines.
Maximum Speed (kts)	26.
LOA/Beam/Draft (f)	79 x 16.5 x 5

7-M PB



Characteristics	Numerous PBs in inventory.
Armament	1 x 14.5-mm twin mount and possible SA-N-5/8 SAMs and/or RPG.
Maximum Speed (kts)	25.
LOA/Beam/Draft (f)	23 x 6.6

SWARY 1 PB

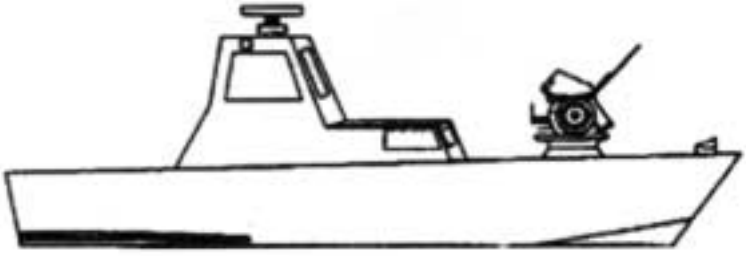


Characteristics	50 in Iraqi inventory.
Armament	1 x 12.7-mm or 7.62-mm MG and RPG quad mount; possible and/or SA-N-5/8 SAMS
Maximum Speed (kts)	28.
LOA/Beam/Draft m(f)	18 x 7 x 1.

SWARY 2 PB

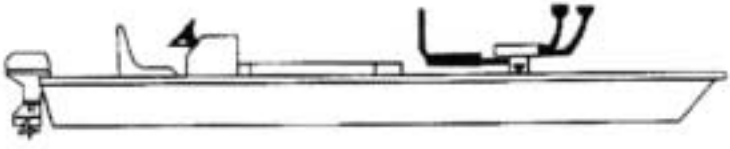
Characteristics	Numerous units; personnel landing craft.
Armament	1 or 2 MGs and possible SA-N-5/8 Sams
Maximum Speed (kts)	30.
LOA/Beam/Draft (f)	27 x 10 x 1.

SWARY 4 PB



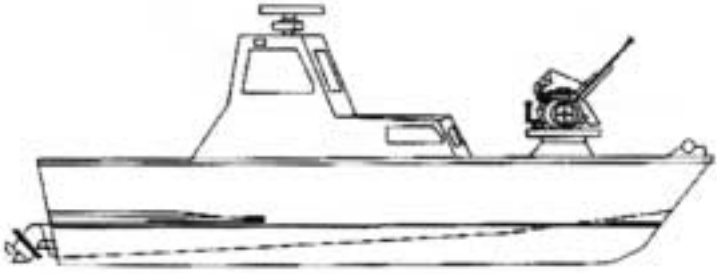
Characteristics	Newer, fiberglass hulled PB; numerous in Iraq.
Armament	23-mm or 14.5-mm twin-barrel or 14.5-mm or 12.7-mm single-barrel and 70-mm 35-tube MBRL or 2 x 57-mm 32-tube rocket pods and possible RPG.
Maximum Speed (kts)	22.
LOA/Beam/Draft (f)	36 x 13 x 2.

SWARY 5 PB



Characteristics	33 in Iraqi inventory.
Armament	1 x 12.7-mm or 7.62-mm MG and possible RPG-7 and/or SA-N-5/8 SAM.
Maximum Speed (kts)	15.
LOA/Beam/Draft (f)	15.7 x 6 x 0.5.

SWARY 6 PB

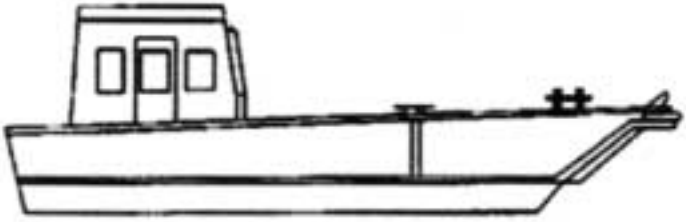


Characteristics	Newer, fiberglass hulled PB; numerous in Iraq.
Armament	23-mm or 14.5-mm twin-barrel and/or SA-N-5/8 SAMs.
Maximum Speed (kts)	22.
LOA/Beam/Draft m(f)	41 x 10 x 2.

SWARY 7 PB

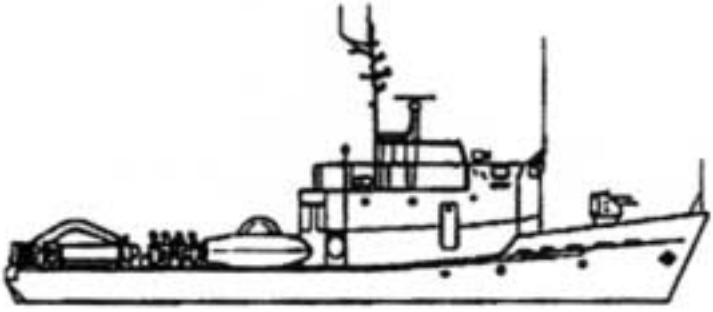
Characteristics	Newer, fiberglass hulled PB; numerous in Iraq.
Armament	1 x 12.7-mm or 7.62-mm MG and/or SA-N-5/8 and/or RPG-7.
Maximum Speed (kts)	12.
LOA/Beam/Draft m(f)	26 x 4 x 1.

SWARY 9 LCPI



Characteristics	Numerous units; personnel landing craft.
Armament	1 or 2 MGs and possible SA-N-5/8 SAMs and possible mortars and/or RPGs.
Maximum Speed (kts)	30.
LOA/Beam/Draft (f)	23.6 x 10.4 x 1.

YEVGENYA MSI

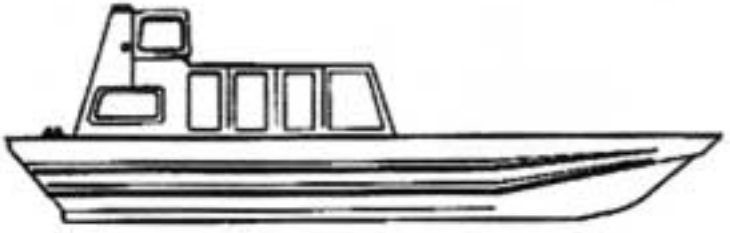


Characteristics	Inshore minesweepers; two in inventory.
Armament	1 x 25-mm twin barrel and mines.
Maximum Speed (kts)	10.
LOA/Beam/Draft (f)	86 x 20 x 5.

NESTIN MSBI

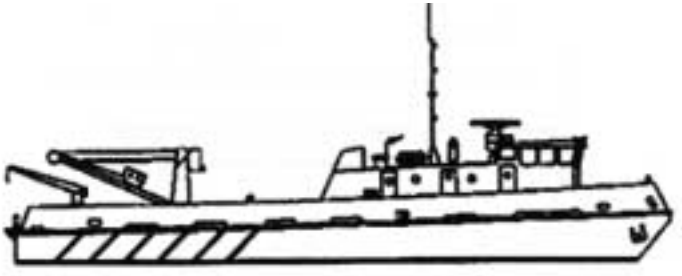
Characteristics	Yugoslavian construction; possibly two remaining.
Armament	2 x 20-mm quad-barrel and mines.
Maximum Speed (kts)	20.
LOA/Beam/Draft (f)	89 x 21 x 4.

12-M LCVPI



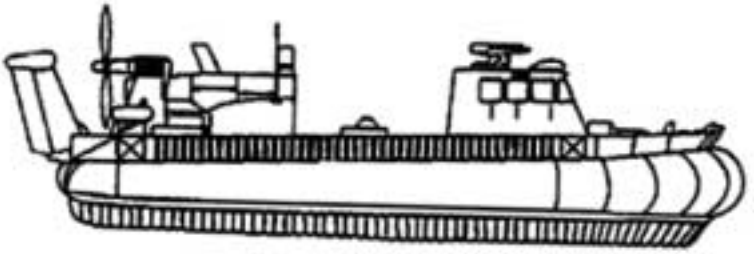
Characteristics	Numerous units; personnel landing craft.
Armament	1 or 2 12.7-mm or 7.62-mm MGs and possible SA-N-5/8, RPGs or mortars.
Maximum Speed (kts)	UNK.
LOA/Beam/Draft (f)	39.4 x 11 x 3.

DAMEN 28-M YGSI



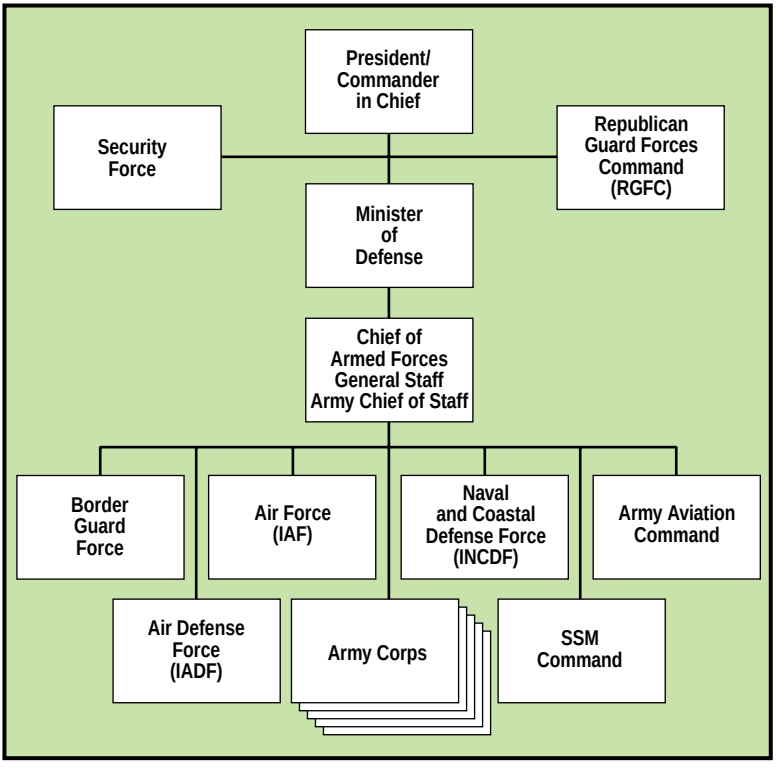
Characteristics	One unit; survey vessel.
Armament	UNK
Maximum Speed (kts)	12.
LOA/Beam/Draft (f)	93.5 x 21 x 6.

BHC SR N6 WINCHESTER (MK6) LCPA

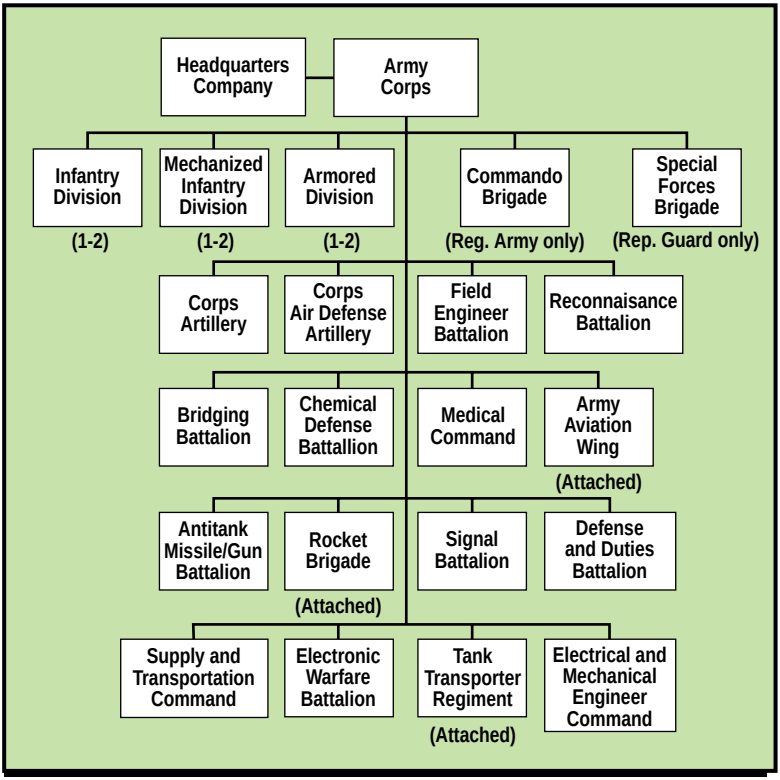


Characteristics	Air-cushion personnel landing craft; three units.
Armament	1 or 2 12.7-mm or 7.62-mm MGS; 4-6 mines.
Maximum Speed (kts)	52.
Lift	6.5 tons bulk.
LOA/Beam/Draft (f)	58 x 28 x 0.3

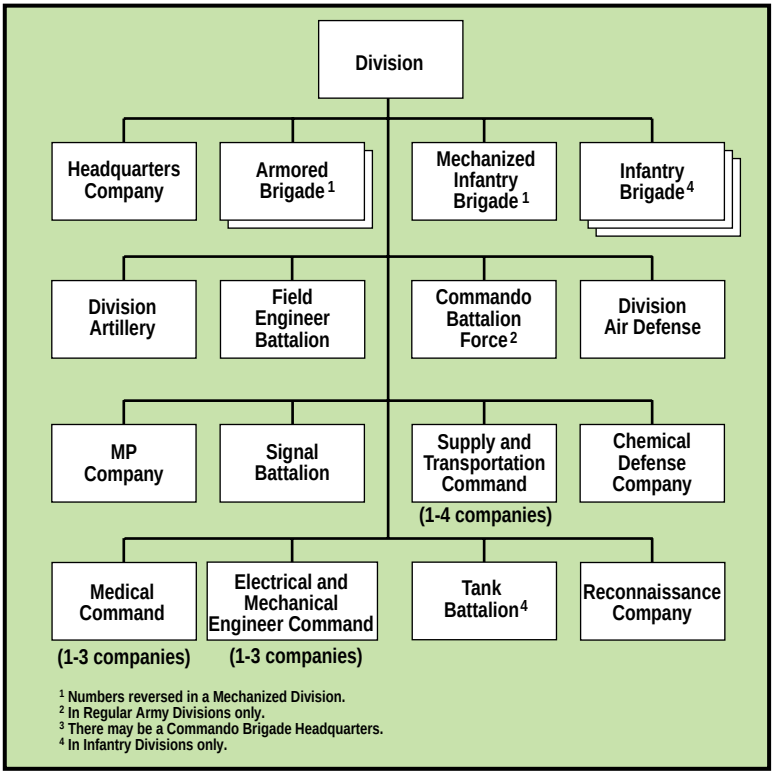
APPENDIX B:
Organizational Charts



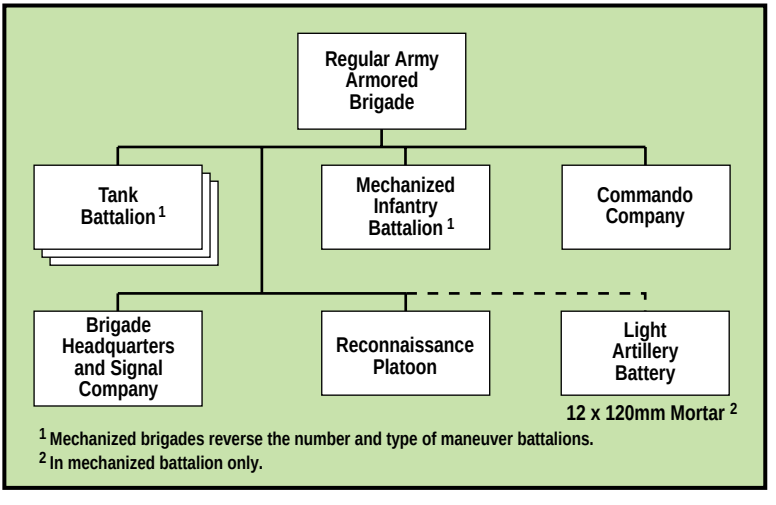
Chain of Command


Headquarters Company
Army Corps
Infantry Division
(1-2)
Mechanized Infantry Division
(1-2)
Armored Division
(1-2)
Commando Brigade
(Reg. Army only)
Special Forces Brigade
(Rep. Guard only)
Corps Artillery
Corps Air Defense Artillery
Field Engineer Battalion
Reconnaisance Battalion
Bridging Battalion
Chemical Defense Battallion
Medical Command
Army Aviation Wing
(Attached)
Antitank Missile/Gun Battalion
Rocket Brigade
(Attached)
Signal Battalion
Defense and Duties Battalion
Supply and Transportation Command
Electronic Warfare Battalion
Tank Transporter Regiment
(Attached)
Electrical and Mechanical Engineer Command

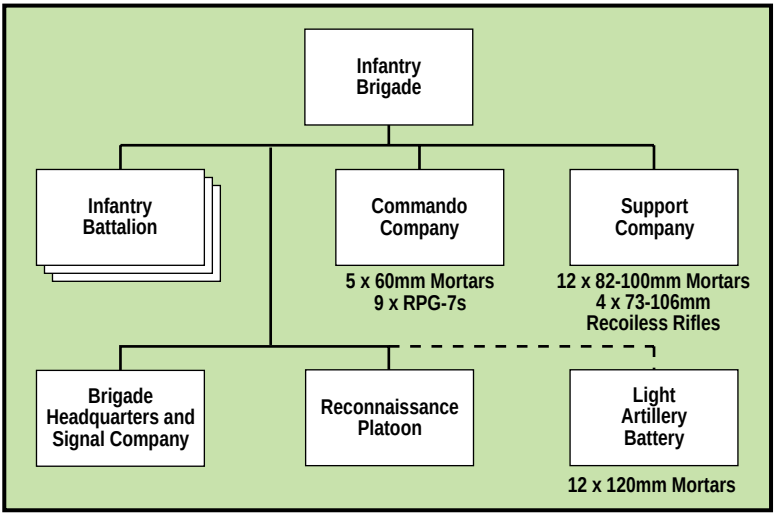
Army Corps


Division
Headquarters Company
Armored Brigade 1
Mechanized Infantry Brigade 1
Infantry Brigade 4
Division Artillery
Field Engineer Battalion
Commando Battalion Force 2
Division Air Defense
MP Company
Signal Battalion
Supply and Transportation Command
(1-4 companies)
Chemical Defense Company
Medical Command
(1-3 companies)
Electrical and Mechanical Engineer Command
(1-3 companies)
Tank Battalion 4
Reconnaissance Company
1 Numbers reversed in a Mechanized Division.
2 In Regular Army Divisions only.
3 There may be a Commando Brigade Headquarters.
4 In Infantry Divisions only.

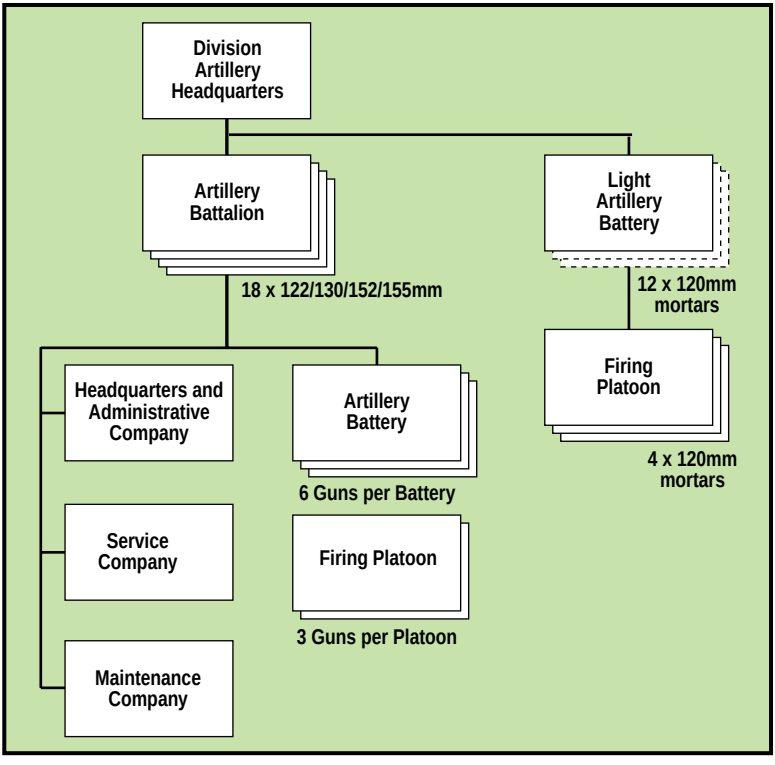
Division



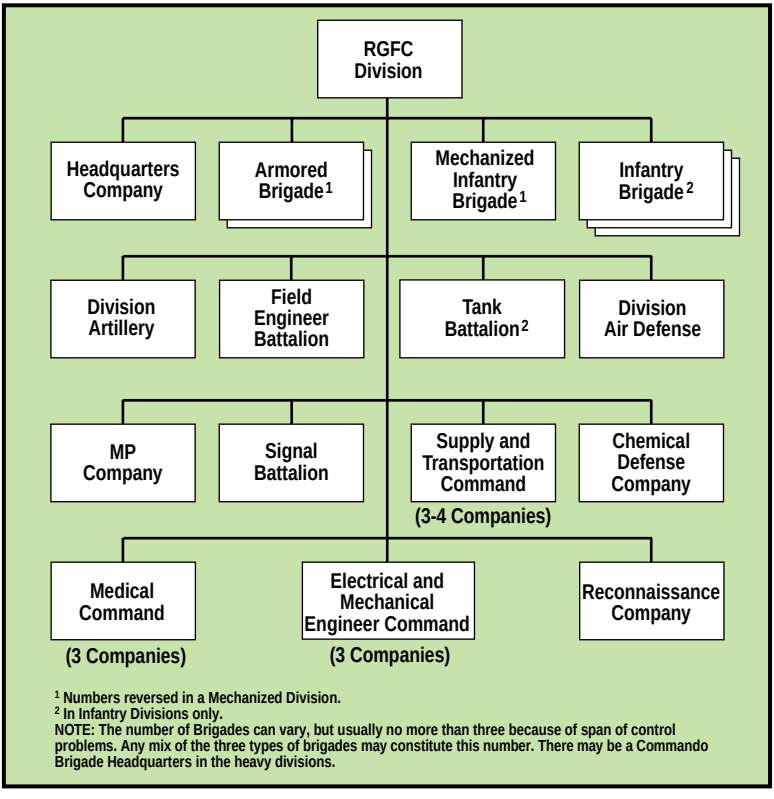
Regular Army Armored Brigade



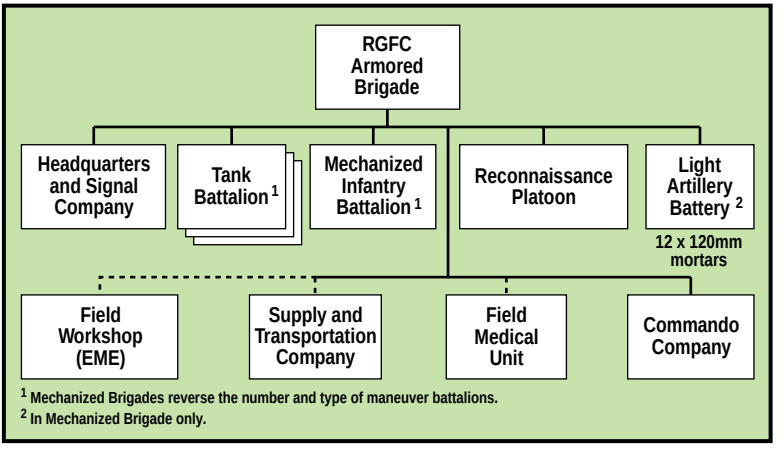
Infantry Brigade



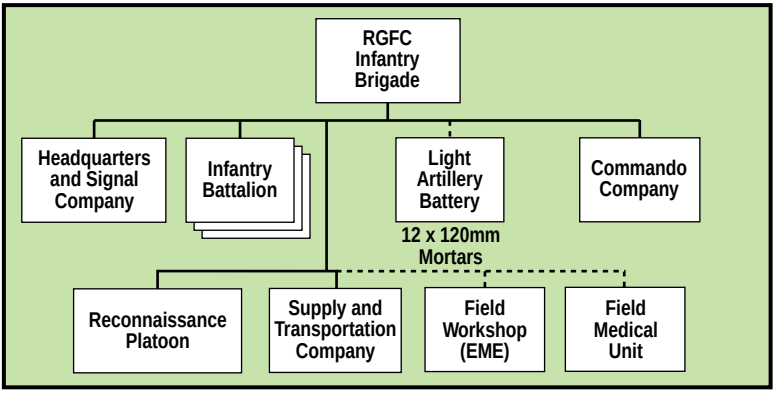
Division Artillery



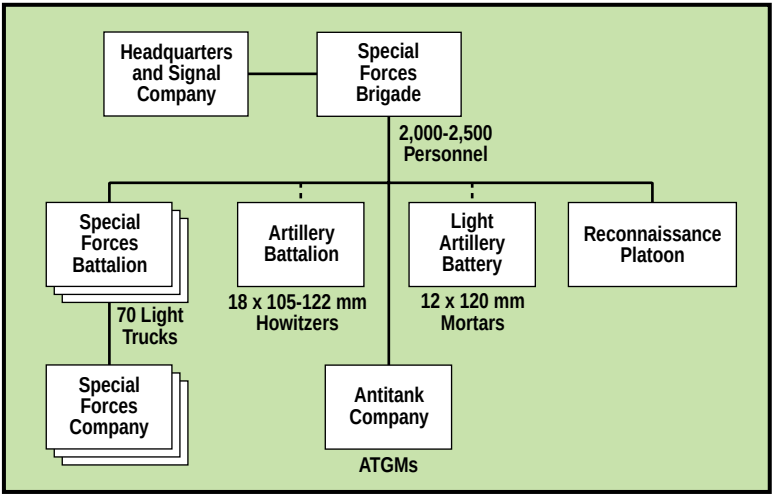
Republican Guard Force Command Division



Republican Guard Force Command Armored Brigade

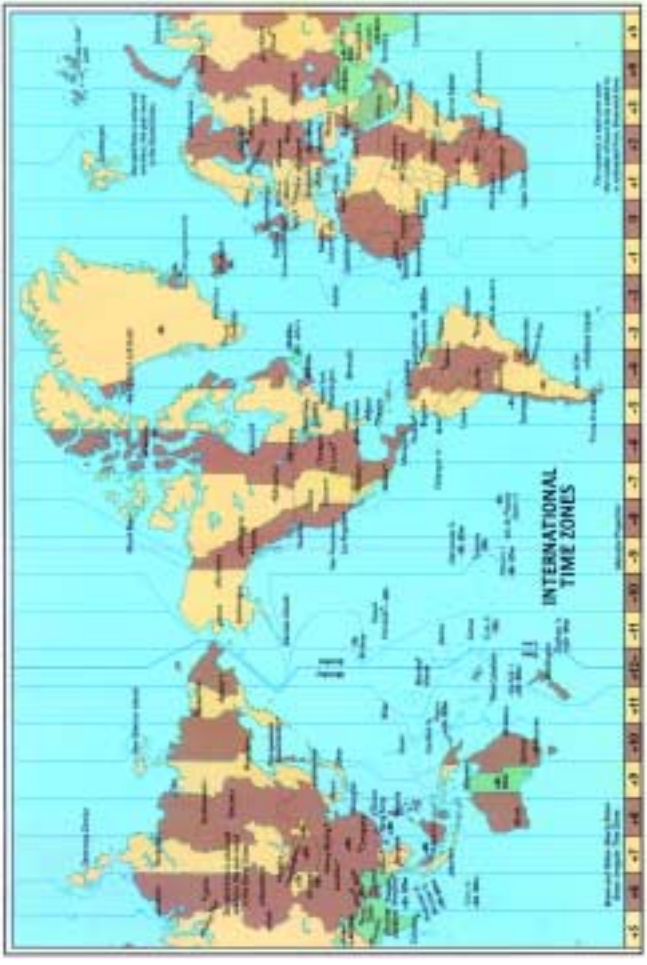


Republican Guard Force Command Infantry Brigade



Special Forces Brigade

APPENDIX C:
International Time Zones



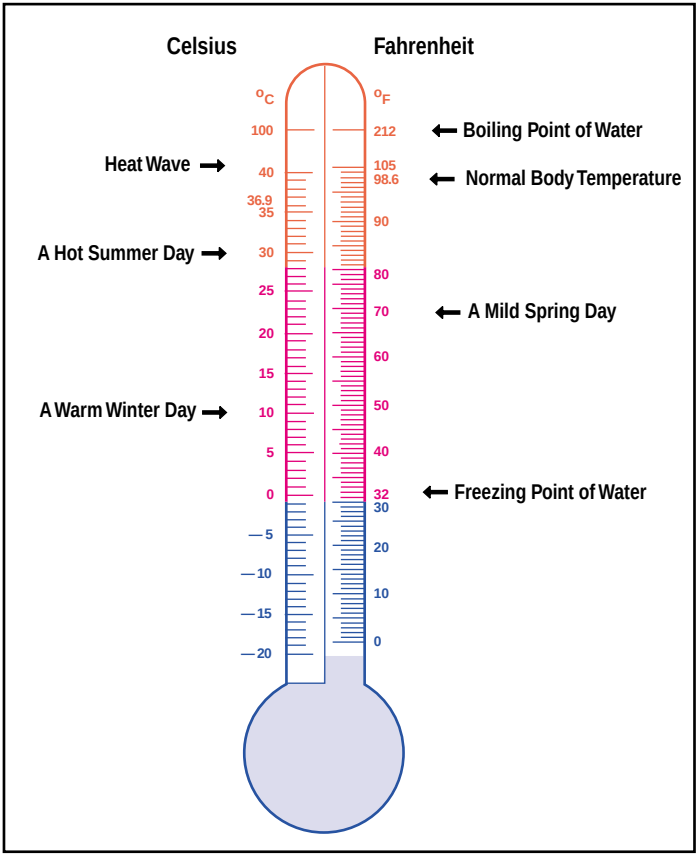
APPENDIX D:
Conversion Charts

When You Know Units of Length	Multiply by	To find
Millimeters	0.04	Inches
Centimeters	0.39	Inches
Meters	3.28	Feet
Meters	1.09	Yards
Kilometers	0.62	Miles
Inches	25.40	Millimeters
Inches	2.54	Centimeters
Feet	30.48	Centimeters
Yards	0.91	Meters
Miles	1.61	Kilometers
Units of Area		
Sq. Centimeters	0.16	Sq. Inches
Sq. Meters	1.20	Sq. Yards
Sq. Kilometers	0.39	Sq. Miles
Hectares	2.47	Acres
Sq. Inches	6.45	Sq. Cm
Sq. Feet	0.09	Sq. Meters
Sq. Yards	0.84	Sq. Meters
Sq. Miles	2.60	Sq. Km
Acres	0.40	Hectares
Units of Mass and Weight		
Grams	0.035	Ounces
Kilograms	2.21	Pounds
Tons (100kg)	1.10	Short Tons
Ounces	28.35	Grams
Pounds	0.45	Kilograms
Short Tons	2.12	Tons

Units of Volume	Multiply by	To find
Milliliters	0.20	Teaspoons
Milliliters	0.06	Tablespoons
Milliliters	0.03	Fluid Ounces
Liters	4.23	Cups
Liters	2.12	Pints
Liters	1.06	Quarts
Liters	0.26	Gallons
Cubic Meters	35.32	Cubic Feet
Cubic Meters	1.35	Cubic Yards
Teaspoons	4.93	Milliliters
Tablespoons	14.78	Milliliters
Fluid Ounces	29.57	Milliliters
Cups	0.24	Liters
Pints	0.47	Liters
Quarts	0.95	Liters
Gallons	3.79	Liters
Cubic Feet	0.03	Cubic Meters
Cubic Yards	0.76	Cubic Meters
Units of Speed		
Miles per Hour	1.61	Km per Hour
Km per Hour	0.62	Miles per Hour

Temperature

To convert Celsius into degrees Fahrenheit, multiply Celsius by 1.8 and add 32. To convert degrees Fahrenheit to Celsius, subtract 32 and divide by 1.8.



Temperature Chart

Currency Conversion Chart

Currency Conversion: MIDDLE EAST CURRENCY to U.S. DOLLAR

	Rate	3.217		Rate	3.745		Rate	0.299		Rate	3.217		Rate	3.745		Rate	0.299
IRAQ DINAR	1	$0.31	SAUDI ARABIA RIYAL	1	$0.27	KUWAIT DINAR	1	$3.34	IRAQ DINAR	19	$5.91	SAUDI ARABIA RIYAL	19	$5.07	KUWAIT DINAR	19	$63.55
	2	$0.62		2	$0.53		2	$6.69		20	$6.22		20	$5.34		20	$66.89
	3	$0.93		3	$0.80		3	$10.03		25	$7.77		25	$6.68		25	$83.61
	4	$1.24		4	$1.07		4	$13.38		30	$9.33		30	$8.01		30	$100.33
	5	$1.55		5	$1.34		5	$16.72		35	$10.88		35	$9.35		35	$117.06
	6	$1.87		6	$1.60		6	$20.07		40	$12.43		40	$10.68		40	$133.78
	7	$2.18		7	$1.87		7	$23.41		45	$13.99		45	$12.02		45	$150.50
	8	$2.49		8	$2.14		8	$26.76		50	$15.54		50	$13.35		50	$167.22
	9	$2.80		9	$2.40		9	$30.10		60	$18.65		60	$16.02		60	$200.67
	10	$3.11		10	$2.67		10	$33.44		70	$21.76		70	$18.69		70	$234.11
	11	$3.42		11	$2.94		11	$36.79		80	$24.87		80	$21.36		80	$267.56
	12	$3.73		12	$3.20		12	$40.13		90	$27.98		90	$24.03		90	$301.00
	13	$4.04		13	$3.47		13	$43.48		100	$31.09		100	$26.70		100	$334.45
	14	$4.35		14	$3.74		14	$46.82		200	$62.17		200	$53.40		200	$668.90
	15	$4.66		15	$4.01		15	$50.17		300	$93.26		300	$80.11		300	$1003.34
	16	$4.97		16	$4.27		16	$53.51		400	$124.34		400	$106.81		400	$1337.79
	17	$5.28		17	$4.54		17	$56.86		500	$155.43		500	$133.51		500	$1672.24
	18	$5.60		18	$4.81		18	$60.20		1000	$310.86		1000	$267.02		1000	$3344.48

Currency Conversion: U.S. DOLLAR to MIDDLE EAST CURRENCY

	Rate		3.217		3.745		0.299		Rate		3.217		3.745		0.299
US DOLLAR	$1	IRAQ DINAR	3.22	SAUDI ARABIA RIYAL	3.74	KUWAIT DINAR	0.30	US DOLLAR	$19	IRAQ DINAR	61.12	SAUDI ARABIA RIYAL	71.15	KUWAIT DINAR	5.68
	$2		6.43		7.49		0.60		$20		64.34		74.90		5.98
	$3		9.65		11.23		0.90		$25		80.42		93.62		7.47
	$4		12.87		14.98		1.20		$30		96.51		112.35		8.97
	$5		16.08		18.72		1.49		$35		112.59		131.07		10.46
	$6		19.30		22.47		1.79		$40		128.68		149.80		11.96
	$7		22.52		26.22		2.09		$45		144.76		168.52		13.45
	$8		25.74		29.96		2.39		$50		160.85		187.25		14.95
	$9		28.95		33.70		2.69		$60		193.01		224.70		17.94
	$10		32.17		37.45		2.99		$70		225.18		262.15		20.93
	$11		35.39		41.19		3.29		$80		257.35		299.60		23.92
	$12		38.60		44.94		3.59		$90		289.52		337.05		26.91
	$13		41.82		48.68		3.89		$100		321.69		374.50		29.90
	$14		45.04		52.43		4.19		$200		643.38		749.00		59.80
	$15		48.25		56.17		4.48		$300		965.07		1123.50		89.70
	$16		51.47		59.92		4.78		$400		1286.76		1498.00		119.60
	$17		54.69		63.66		5.08		$500		1608.45		1872.50		149.50
	$18		57.90		67.41		5.38		$1000		3216.90		3745.00		299.00

Travel Distances

	AMMAN	BAGHDAD	CAIRO	DAMASCUS	DHAHRAN	JERUSALEM	JIDDAH	JUBAIL	MANAMA	MECCA	MEDINA	NAJRAN	RIYADH	SANAA	TABUK	TEHRAN
AMMAN, Jordan	—	510	290	11	960	45	760	905	995	775	575	1090	835	1275	250	910
BAGHDAD, Iraq	510	—	780	475	600	555	890	540	630	880	690	1080	635	1260	590	440
CAIRO, Egypt	290	780	—	325	112	275	760	1080	113	795	630	114	950	1260	310	119
DAMASCUS, Syria	11	475	325	—	990	140	855	920	1005	875	625	116	880	1370	360	860
DHAHRAN, Saudi Arabia	960	600	112	990	—	990	775	70	15	740	670	740	245	860	850	670
JERUSALEM, Israel	45	555	275	140	990	—	760	945	1020	790	590	1085	875	1290	250	955
JIDDAH, Saudi Arabia	760	890	760	855	775	760	—	760	790	20	205	395	520	540	510	1210
JUBAIL, Saudi Arabia	905	540	1080	920	70	945	760	—	90	725	645	755	250	880	815	610
MANAMA, Bahrain	995	630	113	1005	15	1020	790	90	—	255	695	730	265	860	890	675
MECCA, Saudi Arabia	775	880	795	875	740	790	20	725	255	—	215	340	500	510	525	119
MEDINA, Saudi Arabia	575	690	630	625	670	590	205	645	695	215	—	550	450	710	345	1025
NAJRAN, Saudi Arabia	1090	1080	114	116	740	1085	395	755	730	340	550	—	525	150	910	1340
RIYADH, Saudi Arabia	835	635	950	880	245	875	520	250	265	500	450	525	—	675	690	810
SANAA, Yemen	1275	1260	1260	1370	860	1290	540	880	860	510	710	150	675	—	1045	1440
TABUK, Saudi Arabia	250	590	310	360	850	250	510	815	890	525	345	910	690	1045	—	990
TEHRAN, Iran	910	440	119	860	670	955	1210	610	675	119	1025	1340	810	1440	990	—

APPENDIX E:
Holidays

Public/National Holidays

1	January	New Year's Day
6	January	Army Day (1921)
8	February	8th February Revolution
21	March	Spring Day
17	April	Liberation Day
1	May	Labor Day
14	July	July Revolution
17	July	National Day
8	August	Victory Day

Islamic Holidays

The following holidays are based on the Lunar Calendar and vary from year to year:

Eid al Fitr (End of Ramadan)

Eid al Adha (Feast of the Sacrifice)

Hijri (Islamic New Year)

Ashoura, Mouloud (Prophet's Birthday)

APPENDIX F
Language

Arabic Language Guide

Arabic is considered to be the language of Allah. The Koran is written in Arabic, as is some of the world's finest poetry. It is the official language of Iraq and Kuwait, and is spoken by over 197 million persons worldwide. English is widely spoken in official and business circles in Kuwait, less so in Iraq. Kurdish, Assyrian, and Armenian are also spoken in Iraq.

The Arabic alphabet is written from right to left, but numerals are written from left to right. There are 28 characters, all of which are consonants, and 10 numerals. Vowels are unwritten, although three markers are used to ensure proper pronunciation. While there is no capitalization in Arabic, each letter has a different form depending on where it falls in the word — at the beginning, the middle, the end, or standing alone.

Arabic is a semitic language; its structure and grammar are different from English. Words are formed from roots by changing the vowels between the consonants that usually begin and end the word. For example, the word for book is Ketab and the word for library is Maktabah.

Arabic Alphabet/Numerals

theh ث	teh ت	beh ب	alif ا
dal د	kha خ	ha ح	jeem ج
seen س	zain ز	ra ر	thai ذ
tah ط	dhad ض	sad ص	sheen ش
feh ف	ghain غ	ain ع	zah ظ
meem م	lam ل	kaf ك	qaf ق
yeh ى	waw و	heh ه	noon ن

٩ ٨ ٧ ٦ ٥ ٤ ٣ ٢ ١ ٠

9 8 7 6 5 4 3 2 1 0

Key Phrases

(Capital letters indicate stress and apostrophe indicates a stop.)

English	Arabic
Hello.	MARhaban
Please?	men FADlek
Thank you.	SHUKran
Yes.	na'am
No.	la
What?	maa
When?	mata
Where?	AYNa
Which?	aiya
Who?	man
Why?	liMAZa
How much/many?	kaam
How are you?	Kayfu HALukum?
I am fine, thank you.	Anna KWAIsa, SHUKran
Good morning.	soBAH alKHAIR
Good morning. (reply)	soBAH alNOOR
Good evening.	meSAH alKHAIR
Good evening. (reply)	meSAH alNOOR
Good night.	layla SAIDa
Welcome.	AHlen wa SAHlen
Praise God.	alHUMD'allah
Excuse me.	AFwaan
What is this?	Ma HAZa
This is mine.	HAZa li
This is not mine.	HAZa LAISa li
What does this mean?	Ma MA'Na HAZa
Do you speak English?	hal tetaKALum enGLIzi
I am an American.	anna amRIKi
I understand.	anna AFhaam
I don't understand.	anna la AFhaam

English	Arabic
Can you help me?	MOOMkin tiSA’ADni
I’m hungry.	anna ga’ANna
I’m tired.	anna ta’aBAAN
I’m lost.	anna toht
No smoking.	memNOOR aTADkhin

Key Words

English	Arabic
American Embassy	siFAARa amriKIya
arm (body)	ziRAA
bandage	aasaaBI
beach	SHAti
big	kaBIR
blanket	bataNIya
book	kiTAB
boots	boot
bridge	KOObri
building	MA’ABna’a
coat	MItaf
cold	barid
correct	saHIa
early	moBAKir
exit	khaROOJ
far	ba’aid
fast	saRI
first aid kit	A’Lba tis’aFAAT awaLIya
flashlight	bataRIya GAeb
gloves	gowWANti
gulf	khaLIJ
harbor	miNA’
hat	koBA’a
head	ra’as
heavy	taGIL

English	Arabic
highway	taRIQ
hospital	mosTASHfa
hot	harr
how	kayf
hurry	biSOORa
I	anna
insect repellent	daHAN dud alhashaRAT
knife	saKHIna
late	mitAKHer
leg	saq
light	khaFIF
map	khaRITa
market	sooq
matches	kaBRIT
medicine	daWAA
mosque	MASjed
near	kaRIB
new	jaDID
old	kaDIM
open	MOOFtah
passport	joWAZ aSAfar
police	boLIZ
radio	RADio
river	nahr
sea	BAhr
seacoast	shaTI alBAhr
shoes	hiza
shut	maqFOOL
slow	bati
small	saGIR
soap	saBOON
taxi	takZI
the	al

English	Arabic
toilet	TWAAlit
tower	borg
watch	sa'ah
we	NAHnu
wrong	Galat
you	anta

Military Vocabulary

English	Arabic
aircraft	ta'aREH
aircraft carrier	hamLEH ata'aRAT
air defense	deFA' ata'aRET
airfield	maTAR
ammunition	zakhiREH
amphibious	bahrMA'ï
antiair artillery	madeFAIya dud ata'aRET
antilanding defense	deFA' alABrar
antitank artillery	madeFAIya dud alDABabat
army	jaish
artillery	madeFAIya
aviation	tiRAN
battalion	katiBEH
battleship	baraaGEH
bomb	KOONbaLEH
camouflage	tamooYEH
cruise (ship)	toRAD
chemical weapon	saLAH kemeWIya
coastal defense	deFA' saHELi
corps	filg
destroyer (ship)	moDEMorah
division	farqh
engineer	moHANDis
garrison	hamiEH

English	Arabic
gun	maadFA
handgrenade	KOONbaleh alyedeWIya
headquarters	kiYADH
helicopter	heliKOPter
howitzer	HOWwitzer
infantry	moSHA'at
latitude	khat alARad
longitude	khat aTOOL
machine gun	reSHASHa
map	khaRITa
military	oskeRIya
mine	allaGHAM
minefield	haql allaGHAM
mortar	haWEN
nuclear weapon	saLAH atomiKIya
platoon	fasiLEH
radar	raDAR
reconnaissance	estatLAH
rifle	BOONdook
submachine gun	raSHASHa kaSIRa
tactics	takTIK
tank	daBABa
topography	toboograFIa
torpedo	toorBID
weapon	saLAH
weather	aTUKS

Military Ranks

English	Arabic
Private First Class	joondee awwal
Corporal	areef
Sergeant	rakeeb
Sergeant Major	rakeebawwal

English	Arabic
Second Lieutenant	moolazim
First Lieutenant	moolazim awwal
Captain	nakeeb
Major	raa'i'd
Lieutenant Colonel	mookaddam
Colonel	mookaddam
Brigadier General	ameed

Numbers

English	Arabic	English	Arabic
One	wahid	Eleven	ihdash
Two	thnayn	Twelve	thnash
Three	thalatha	Thirteen	thalattash
Four	arbaa	Fourteen	arbaatash
Five	khamsa	Fifteen	khamastash
Six	sitta	Sixteen	sittash
Seven	sabaa	Seventeen	sabaatash
Eight	thmanya	Eighteen	thamantash
Nine	tisaa	Nineteen	tisaatash
Ten	ashara	Twenty	ishreen

APPENDIX G:
International Road Signs

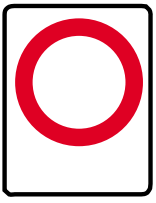
APPENDIX H:
Arabic Road Signs

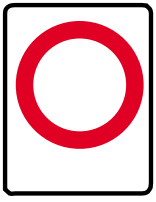
No U turn

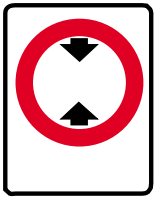
No left turn

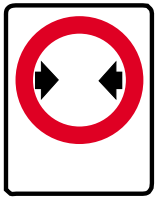
No entry

No right turn

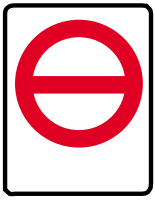

Maximum load 10 tons


Maximum speed 60 kph.


Maximum height 4 m.

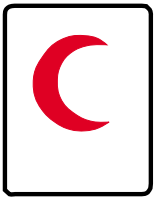

Maximum width 2 m.

No stopping


Road closed

Parking

No parking


Hospital

No honking

Animal-drawn vehicles prohibited

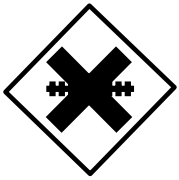
Handcarts prohibited

First-aid post

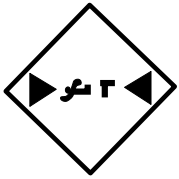
Petrol

Garage

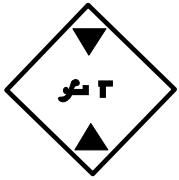
One way



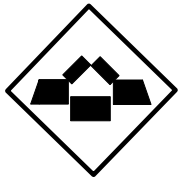
level (railroad) crossing without barrier



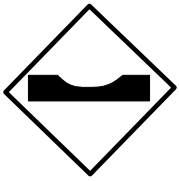
Maximum width 3 m.



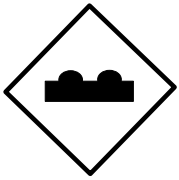
Maximum height 4 m.



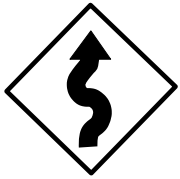
Opening or swing bridge



Dip

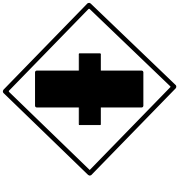


Uneven road



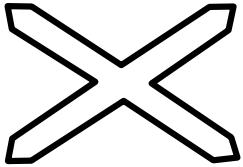
Winding road

Steep hill



Stop at major road ahead

Side road



Location of level (railroad) crossing witho gate or barrier

APPENDIX I:
Deployed Personnel's Guide to Health Maintenance

DoD-prescribed immunizations and medications, including birth control pills, should be brought in sufficient quantity for deployment's duration.

Only food, water, and ice from approved U.S. military sources should be consumed. Consuming food or water from unapproved sources may cause illness. Food should be thoroughly cooked and served hot.

Thorough hand-washing before eating and after using the latrine is highly recommended, as is regular bathing. Feet should be kept dry and treated with antifungal powder. Socks and underwear should be changed daily; underwear should fit loosely and be made of cotton fiber.

Excessive heat and sunlight exposure should be minimized. Maintaining hydration is important, as are following work-rest cycles and wearing uniforms properly. Sunglasses, sunscreen (SPF 15 or higher), and lip balm are recommended. Drinking alcohol should be avoided. Personnel with previous heat injuries should be closely monitored.

Uniforms should be worn properly (blouse boots). DEET should be applied to exposed skin and uniforms treated with permethrin; permethrin is not intended for use on skin. Proper treatment and wear of uniform, plus application of DEET to exposed skin, decreases the risk of diseases transmitted by biting insects.

Overcrowded living areas should be avoided. Ventilated living areas and avoiding coughing or sneezing toward others will reduce colds and other respiratory infections. Cots or sleeping bags should be arranged "head to toe" to avoid the face-to-face contact that spreads germs.

Contact with animals is not recommended. Animals should not be kept as mascots. Cats, dogs, and other animals can transmit disease. Food should not be kept in living areas as it attracts rodents and insects, and trash should be disposed of properly.

Hazardous snakes, plants, spiders, and other insects and arthropods such as scorpions, centipedes, ants, bees, wasps, and flies should be avoided. Those bitten or stung should contact U.S. medical personnel.

All sexual contact should be avoided. Properly used condoms offer some protection from sexually transmitted diseases but not full protection.

Stress and fatigue can be minimized by maintaining physical fitness, staying informed, and sleeping when the mission and safety permits. Alcohol should be avoided as it causes dehydration, contributes to jet lag, can lead to depression, and decreases physical and mental readiness. Separation anxiety, continuous operations, changing conditions, and the observation of human suffering will intensify stress. Assistance from medical personnel or chaplains is available.

Additional Information

Water

If unapproved water, as found in many lakes, rivers, streams, and city water supplies must be used in an emergency, the water may be disinfected by:

- Adding calcium hypochlorite at 5.0 ppm for 30 minutes;
- Adding Chlor-Floc or iodine tablets according to label instructions;
- Heating water to a rolling boil for 5 to 10 minutes; or
- Adding 2 to 4 drops of ordinary chlorine bleach per quart of water and waiting 30 minutes before using it.

Either U.S. military preventive medicine or veterinary personnel should inspect bottled water supplies. Bottled water does not guarantee purity; direct sunlight on bottled water supplies may promote bacterial growth.

Water in canals, lakes, rivers, and streams is likely contaminated; unnecessary bathing, swimming, and wading should be avoided. If the tactical situation requires entering bodies of water, all exposed skin should be covered to protect from parasites. Following exposure, it is important to dry vigorously and change clothing.

Rodents

Rodents should not be tolerated in the unit area; they can spread serious illness. Diseases may be contracted through rodent bites or scratches, transmitted by insects carried on rodents (such as fleas, ticks, or mites), or by contamination of food from rodent nesting or feeding. Personnel can minimize the risk of disease caused by rodents by:

- Maintaining a high state of sanitation throughout the unit area;
- Sealing openings 1/4 inch or greater to prevent rodents from entering unit areas;
- Avoiding inhalation of dust when cleaning previously unoccupied areas (mist these areas with water prior to sweeping; when possible, disinfect area using 3 ounces of liquid bleach per 1 gallon of water).
- Promptly removing dead rodents. Personnel should use disposable gloves or plastic bags over the hands when handling any dead animal and place the dead rodent/animal into a plastic bag prior to disposal.
- Seeking immediate attention if bitten or scratched by a rodent or if experiencing difficulty breathing or flu-like symptoms.

Insects

Exposure to harmful insects, ticks, and other pests is a year-round, worldwide risk. The following protective measures reduce the risk of insect and tick bites:

- Use DoD-approved insect repellents properly;
- Apply DEET on all exposed skin;
- Apply permethrin on clothing and bed nets;
- Tuck bed net under bedding; use bed net pole;
- Avoid exposure to living or dead animals;
- Regularly check for ticks;
- Discourage pests by disposing of trash properly; eliminate food storage in living areas; and
- Cover exposed skin by keeping sleeves rolled down when possible, especially during peak periods of mosquito biting (dusk and dawn); keep undershirts tucked into pants; tuck pant legs into boots.

Uniforms correctly treated with permethrin, using either the aerosol spray-can method (reapply after sixth laundering) or with the Individual Dynamic Absorption (IDA) impregnation kit (good for 6 months or the life of the uniform) will help minimize risks posed by insects. The date of treatment should be labeled on the uniform.

Bed nets should be treated with permethrin for protection against biting insects using either the single aerosol spray can method (treating two bed nets) or the unit's 2-gallon sprayer. All personnel should sleep under mosquito nets, regardless of time of day, ensure netting is tucked under bedding, and use poles to prevent bed nets from draping on the skin.

DoD-approved insect repellents are:

IDA KIT: NSN 6840-01-345-0237
Permethrin Aerosol Spray: NSN 6840-01-278-1336
DEET Insect Repellent: NSN 6840-01-284-3982

Hot Weather

If heat is a threat in the area, personnel should:

- Stay hydrated by drinking water frequently;
- Follow work-rest cycles;
- Monitor others who may have heat-related problems;
- Wear uniforms properly;
- Use a sun block (SPF 15 or higher), sunglasses, and lip balm;
- During hot weather, wear natural fiber clothing (such as cotton) next to the skin for increased ventilation;
- Seek immediate medical attention for heat injuries such as cramps, exhaustion, or stroke. Heat injuries can also occur in cold weather;
- Avoid standing in direct sunlight for long periods; be prepared for sudden drops in temperature at night, and construct wind screens if necessary to avoid blowing dust or sand.

Sunscreens:

Sunscreen lotion: NSN 6505-01-121-2336
Non-alcohol lotion base sunscreen: NSN 6505-01-267-1486

WORK/REST TABLE

		EASY WORK		MODERATE WORK		HARD WORK	
Heat Cat	**WBGT Index (^{o} F)**	**Work / Rest**	**Water Intake (Qt/Hr)**	**Work / Rest**	**Water Intake (Qt/Hr)**	**Work / Rest**	**Water Intake (Qt/Hr)**
1	78 – 81.9	NL	1/2	NL	3/4	40/20 min	3/4
2	82 – 84.9	NL	1/2	50/10 min	3/4	30/30 min	1
3	85 – 87.9	NL	3/4	40/20 min	3/4	30/30 min	1
4	88 – 89.9	NL	3/4	30/30 min	3/4	20/40 min	1
5	> 90	50/10 min	1	20/40 min	1	10/50 min	1

The work/rest times and fluid replacement volumes will sustain performance and hydration for at least 4 hours of work in the specific heat category. Individual water needs will vary +/- (plus/minus) 1/4 qt/hr. NL = no limit to work time per hour. Rest means minimal physical activity (sitting or standing) and should be done in shade if possible. **Caution:** Hourly fluid intake should not exceed 1 ½ quarts. Daily intake should not exceed 12 quarts. Note: MOPP gear adds 10° to WBGT Index.

Food

High risk food items such as fresh eggs, unpasteurized dairy products, lettuce or other uncooked vegetables, and raw or undercooked meats should be avoided unless they are from U.S. military approved sources. Those who must consume unapproved foods should choose low risk foods such as bread and other baked goods, fruits that have thick peels (washed with safe water), and boiled foods such as rice and vegetables.

Human Waste

Military-approved latrines should be used when possible. If no latrines are available, personnel should bury all human waste in pits or trenches.

Cold Weather

If cold weather injuries are a threat in the area, personnel should:

- Drink plenty of fluids, preferably water or other decaffeinated beverages;
- Closely monitor others who have had previous cold injuries;
- Use well-ventilated warming tents and hot liquids for relief from the cold. Watch for shivering and increase rations to the equivalent of four MREs per day;
- Not rest or sleep in tents or vehicles unless well ventilated; temperatures can drop drastically at night;
- Dress in layers, wear polypropylene long underwear, and use sunglasses, scarf, unscented lip balm, sunscreen, and skin moisturizers;
- Insulate themselves from the ground with tree boughs or sleeping mats and construct windscreens to avoid unnecessary heat loss; and
- Remember that loss of sensitivity in any body part requires immediate medical attention.

WIND SPEED		COOLING POWER OF WIND EXPRESSED AS "EQUIVALENT CHILL TEMPERATURE"																				
KNOTS	MPH	TEMPERATURE (°F)																				
CALM	CALM	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	-55	-60
		EQUIVALENT CHILL TEMPERATURE																				
3 - 6	5	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	-55	-60	-70
7 - 10	10	30	20	15	10	5	0	-10	-15	-20	-25	-35	-40	-45	-50	-60	-65	-70	-75	-80	-90	-95
11 - 15	15	25	15	10	0	-5	-10	-20	-25	-30	-40	-45	-50	-60	-65	-70	-80	-85	-90	-100	-105	-110
16 - 19	20	20	10	5	0	-10	-15	-25	-30	-35	-45	-50	-60	-65	-75	-80	-85	-95	-100	-110	-115	-120
20 - 23	25	15	10	0	-5	-15	-20	-30	-35	-45	-50	-60	-65	-75	-80	-90	-95	-105	-110	-120	-125	-135
24 - 28	30	10	5	0	-10	-20	-25	-30	-40	-50	-55	-60	-70	-80	-85	-95	-100	-110	-115	-125	-130	-140
29 - 32	35	10	5	-5	-10	-20	-30	-35	-40	-50	-60	-65	-75	-80	-90	-100	-105	-115	-120	-130	-135	-145
33 - 36	40	10	0	-5	-10	-20	-30	-35	-45	-55	-60	-70	-75	-85	-95	-100	-110	-115	-125	-130	-140	-150
Winds Above 40 MPH Have Little Additional Effect		LITTLE DANGER					INCREASING DANGER Flesh may freeze within 1 minute						GREAT DANGER Flesh may freeze within 30 seconds									

First Aid

Basic Lifesaving

Those caring for injured persons should immediately:

- Establish an open airway,
- Ensure the victim is breathing,
- Stop bleeding to support circulation,
- Prevent further disability,
- Place dressing over open wounds,
- Immobilize neck injuries,
- Splint obvious limb deformities, and
- Minimize further exposure to adverse weather.

Injuries and Care

Shock

- Symptoms:
  - Confusion
  - Cold, clammy skin
  - Sweating
  - Shallow, labored, and rapid breathing
  - Rapid pulse
- Treatment:
  - An open airway should be maintained.
  - Unconscious victims should be placed on their side.
  - Victims should be kept calm, warm, and comfortable.
  - Lower extremities should be elevated.
  - Medical attention should be sought as soon as possible.

Abdominal Wound

- Treatment:
  - Exposed organs should be covered with moist, clean dressing.
  - Wound should be secured with bandages.
  - Displaced organs should never be reintroduced to the body.

Bleeding

- Treatment:
  - Direct pressure with hand should be applied; a dressing should be used if available.
  - Injured extremity should be elevated if no fractures are suspected.
  - Pressure points may be used to control bleeding.
  - Dressings should not be removed; additional dressings may be applied over old dressings.
- Tourniquet:
  - **NOTE: Tourniquets should only be used when an injury is life threatening.**
  - A 1-inch band should be tied between the injury and the heart, 2 to 4 inches from the injury, to stop severe bleeding; wire or shoe strings should not be used.
  - Band should be tight enough to stop bleeding and no tighter.
  - Once the tourniquet is tied, it should not be loosened.
  - The tourniquet should be left exposed for quick visual reference.
  - The time that the tourniquet is tied and the letter “T” should be written on the casualty’s forehead.

Eye Injury

Treatment:

- Embedded objects should not be removed; dressings should secure objects to prohibit movement.
- Bandages should be applied lightly to both eyes.
- Patients should be continuously attended.

Chest Wound

Symptoms:

- Sucking noise from chest
- Frothy red blood from wound

Treatment:

- Entry and exit wounds should be identified; wounds should be covered (aluminum foil, ID card).
- Three sides of the material covering the wound should be taped, leaving the bottom untaped.
- Victim should be positioned to facilitate easiest breathing.

Fractures

Symptoms:

- Deformity, bruising
- Tenderness
- Swelling and discoloration

Treatment:

- Fractured limb should not be straightened.
- Injury should be splinted with minimal movement of injured person.
- Joints above and below the injury should be splinted.
- If not in a chemical environment, remove clothing from injured area.
- Rings should be removed from fingers.
- Check pulse below injury to determine blood flow restrictions.

Spinal, Neck, Head Injury

Symptoms:

- Lack of feeling and/or control below neck

Treatment:

- Conscious victims should be cautioned to remain still.
- Airway should be checked without moving injured person's head.

- Victims who must be moved should be placed, without bending or rotating victim's head and neck, on a hard surface that would act as a litter (door, cut lumber).
- Head and neck should be immobilized.

Heat Injuries

Heat Cramps

Symptoms:

- Spasms, usually in muscles or arms
- Results from strenuous work or exercise
- Loss of salt in the body
- Normal body temperature

Heat Exhaustion

Symptoms:

- Cramps in abdomen or limbs
- Pale skin
- Dizziness, faintness, weakness
- Nausea or vomiting
- Profuse sweating or moist, cool skin
- Weak pulse
- Normal body temperature

Heat Stroke

Symptoms:

- Headache, dizziness
- Red face/skin
- Hot, dry skin (no sweating)
- Strong, rapid pulse
- High body temperature (hot to touch)

Treatment:

- Victim should be treated for shock.
- Victim should be laid in a cool area with clothing loosened.
- Victim can be cooled by sprinkling with cool water or fanning (though not to the point of shivering).
- If conscious, victim may drink cool water (2 teaspoons of salt to one canteen may be added).
- Seek medical attention immediately; heat stroke can result in death.

Burns

Burns may be caused by heat (thermal), electricity, chemicals, or radiation. Treatment is based on depth, size, and severity (degree of burn). All burn victims should be treated for shock and seen by medical personnel.

Thermal/First Degree

Symptoms:

- Skin reddens
- Painful

Treatment:

- Source of burn should be removed.
- Cool water should be applied to the affected area.

Thermal/Second Degree

Symptoms:

- Skin reddens and blisters
- Very painful

Treatment:

- Source of burn should be removed.
- Cool water should be applied to the affected area.
- Blisters should not be broken.
- A dry dressing should cover the affected area.

Thermal/Third Degree

Symptoms:

- Charred or whitish looking skin
- May burn to the bone
- Burned area not painful; surrounding area very painful

Treatment:

- Source of burn should be removed.
- Clothing that adheres to burned area should not be removed.
- A dry dressing should cover the affected area.

Electrical Burns

Treatment:

- Power source must be off.
- Entry and exit wounds should be identified.
- Burned area should be treated in accordance with its severity.

Chemical Burns

Treatment:

- Skin should be flushed with a large amount of water; eyes should be flushed for at least 20 minutes.
- Visible contaminants should be removed.
- Phosphorus burns should be covered with a wet dressing (prevents air from activating the phosphorous)

Cold Injuries

Hypothermia

Symptoms:

- Body is cold under clothing
- Victim may appear confused or dead

Treatment:

- Victim should be moved to a warm place.
- Wet clothing should be removed; victim should be dressed in warm clothing or wrapped in a dry blanket.
- Body parts should not be rubbed.
- Victims must not consume alcoholic beverages.

Frostbite

Symptoms:

- Skin appears white or waxy
- Skin is hard to the touch

Treatment:

- Victim should be moved to a warm place.
- Affected area should be warmed in 104 to 108° F (40° C) water for 15 to 30 minutes (NOT hot water).
- Affected area should be covered with several layers of clothing.
- Affected area must not be rubbed.
- Victim must seek medical attention.

Emergency Life-Saving Equipment

Equipment may be improvised when necessary. Following is a list of possible uses for commonly found items.

Shirts = Dressings/Bandages
Belts, Ties = Tourniquets, Bandages
Towels, Sheets = Dressings/Bandages
Socks, Panty Hose, Flight cap = Dressings/Bandages
Sticks or Tree Limbs = Splints
Blankets = Litters, Splints
Field Jackets = Litters
BDU Shirts = Litters/Splints
Ponchos = Litters/Bandages
Rifle Sling = Bandages
M-16 Heat Guards = Splints

APPENDIX J:
Individual Protective Measures

Security Threats

Individual protective measures are the conscious actions which people take to guard themselves against physical harm. These measures can involve simple acts such as locking your car and avoiding areas where crime is rampant. When physical protection measures are combined they form a personal security program, the object of which is to make yourself a harder target. The following checklists contain basic individual protective measures that, if understood and followed, may significantly reduce your vulnerability to the security threats overseas (foreign intelligence, security services, and terrorist organizations). If you are detained or taken hostage, following the measures listed in these checklists may influence or improve your treatment.

Foreign Intelligence and Security Services

- Avoid any actions or activities that are illegal, improper, or indiscreet.
- Guard your conversation and keep sensitive papers in your custody at all times.
- Take it for granted that you are under surveillance by both technical and physical means, including:
  - ❏ Communications monitoring (telephone, telex, mail, and radio)
  - ❏ Photography
  - ❏ Search
  - ❏ Eavesdropping in hotels, offices, and apartments
- Do not discuss sensitive matters:
  - ❏ On the telephone
  - ❏ In your room
  - ❏ In a car, particularly in front of an assigned driver

- Do not leave sensitive personal or business papers:
  - In your room
  - In the hotel safe
  - In a locked suitcase or briefcase
  - In unattended cars, offices, trains, or planes
  - Open to photography from the ceiling
  - In wastebaskets as drafts or doodles
- Do not try to defeat surveillance by trying to slip away from followers or by trying to locate “bugs” in your room. These actions will only generate more interest in you. If you feel you are under surveillance, act as naturally as possible, go to a safe location (your office, hotel, U.S. Embassy), and contact your superior.
- Avoid offers of sexual companionship. They may lead to a room raid, photography, and blackmail. Prostitutes in many countries report to the police, work for a criminal organization, or are sympathetic to insurgent or terrorist organizations; in other words, are anti-U.S. Others may be employed by an intelligence service.
- Be suspicious of casual acquaintances and quick friendships with local citizens in intelligence/terrorist threat countries. In many countries, people tend to stay away from foreigners and do not readily or easily make contact. Many who actively seek out friendships with Americans may do so as a result of government orders or for personal gain.

In your personal contacts, follow these guidelines:

- Do not attempt to keep up with your hosts in social drinking.
- Do not engage in black market activity for money or goods.
- Do not sell your possessions.
- Do not bring in or purchase illegal drugs.
- Do not bring in pornography.

- Do not bring in religious literature for distribution. (You may bring one Bible, Koran, or other religious material for your own personal use.)
- Do not seek out religious or political dissidents.
- Do not take ashtrays, towels, menus, glasses, or other mementos from hotels or restaurants.
- Do not accept packages, letters, etc., from local citizens for delivery to the U.S.
- Do not make political comments or engage in political activity.
- Do not be lured into clandestine meetings with would-be informants or defectors.
- Be careful about taking pictures. In some countries it is unwise to take photographs of scenes that could be used to make unfavorable comparisons between U.S. and local standards of living or other cultural differences. Avoid taking any photographs from moving buses, trains, or aircraft.

  The following picture subjects are clearly prohibited in most countries where an intelligence or terrorist/insurgent threat is evident:

  - Police or military installations and personnel
  - Bridges
  - Fortifications
  - Railroad facilities
  - Tunnels
  - Elevated trains
  - Border areas
  - Industrial complexes
  - Port complexes
  - Airports

Detention

Most intelligence and security services in threat countries detain persons for a wide range of real or imagined wrongs. The best advice, of course, is to do nothing that would give a foreign service the least reason to pick you up. If you are arrested or detained by host nation intelligence or security, however, remember the following:

- Always ask to contact the U.S. Embassy. You are entitled to do so under international diplomatic and consular agreements, to which most countries are signatories.
- Phrase your request appropriately. In Third World countries, however, making demands could lead to physical abuse.
- Do not admit to wrongdoing or sign anything. Part of the detention ritual in some threat countries is a written report you will be asked or told to sign. Decline to do so, and continue demanding to contact the Embassy or consulate.
- Do not agree to help your detainer. The foreign intelligence or security service may offer you the opportunity to help them in return for releasing you, foregoing prosecution, or not informing your employer or spouse of your indiscretion. If they will not take a simple no, delay a firm commitment by saying that you have to think it over.
- Report to your supervisor immediately. Once your supervisor is informed, the Embassy or consulate security officer needs to be informed. Depending on the circumstances and your status, the Embassy or consulate may have to provide you assistance in departing the country expeditiously.
- Report to your unit's security officer and your service's criminal investigative branch upon returning to the U.S. This is especially important if you were unable to report to the Embassy or consulate in country. Remember, you will not be able to outwit a foreign intelligence organization. Do not compound your error by betraying your country.

Foreign Terrorist Threat

Terrorism may seem like mindless violence committed without logic or purpose, but it is not. Terrorists attack soft and undefended targets, both people and facilities, to gain political objectives they see as out of reach by less violent means. Many of today's terrorists view no one as innocent. Thus, injury and loss of life are justified as acceptable means to gain the notoriety generated by a violent act in order to support their cause.

Because of their distinctive dress, speech patterns, and outgoing personalities, Americans are often highly visible and easily recognized when they are abroad. The obvious association of U.S. military personnel with their government enhances their potential media and political worth as casualties or hostages. Other U.S. citizens are also at risk, including political figures, police, intelligence personnel, and VIPs (such as businessmen and celebrities).

Therefore, you must develop a comprehensive personal security program to safeguard yourself while traveling abroad. An awareness of the threat and the practice of security procedures like those advocated in crime prevention programs are adequate precautions for the majority of people. While total protection is impossible, basic common sense precautions such as an awareness of any local threat, elimination of predictable travel and lifestyle routines, and security consciousness at your quarters or work locations significantly reduce the probability of success of terrorist attacks.

To realistically evaluate your individual security program, you must understand how terrorists select and identify their victims. Terrorists generally classify targets in terms of accessibility, vulnerability, and political worth (symbolic nature). These perceptions may not be based on the person's actual position, but rather the image of wealth or importance they represent to the public. For each potential target, a risk versus gain assessment is conducted to determine if a terrorist can victimize a target without ramifications to the terrorist organization. It is during this

phase that the terrorist determines if a target is “hard or soft.” A hard target is someone who is aware of the threat of terrorism and adjusts his personal habits accordingly. Soft targets are oblivious to the threat and their surroundings, making an easy target.

Identification by name is another targeting method gathered from aircraft manifests, unit/duty rosters, public documents (Who’s Who or the Social Register), personnel files, discarded mail, or personal papers in trash. Many targets are selected based upon their easily identifiable symbols or trademarks, such as uniforms, luggage (seabags or duffle bags), blatant national symbols (currency, tatoos, and clothing), and decals and bumper stickers.

Travel Security

Travel on temporary duty (TAD/TDY) abroad may require you to stay in commercial hotels. Being away from your home duty station requires increasing your security planning and awareness; this is especially important when choosing and checking into a hotel and during your residence there.

The recent experiences with airport bombings and airplane hijacking suggest some simple precautions:

- You should not travel on commercial aircraft outside the continental U.S. in uniform.
- Prior to traveling by commercial aircraft, you should screen your wallet and other personal items, removing any documents (that is, credit cards, club membership cards, etc.) which would reveal your military affiliation.
  NOTE: Current USMC policy requires service members to wear two I.D. tags with metal necklaces when on official business. Also, the current I.D. card must be in possession at all times. These requirements include travel to or through terrorist areas. In view of these requirements, the service member must be prepared to remove and

conceal these and any other items which would identify them as military personnel in the event of a skyjacking.

- You should stay alert to any suspicious activity when traveling. Keep in mind that the less time spent in waiting areas and lobbies, the better. This means adjusting your schedule to reduce your wait at these locations.
- You should not discuss your military affiliation with anyone during your travels because it increases your chances of being singled out as a symbolic victim.
- In case of an incident, you should not confront a terrorist or present a threatening image. The lower profile you present, the less likely you will become a victim or bargaining chip for the terrorists, and your survivability increases.

Hostage Situation

The probability of anyone becoming a hostage is very remote. However, as a member of the Armed Forces, you should always consider yourself a potential hostage or terrorist victim and reflect this in planning your affairs, both personal and professional. You should have an up-to-date will, provide next of kin with an appropriate power-of-attorney, and take measures to ensure your dependents' financial security if necessary. Experience has shown that concern for the welfare of family members is a source of great stress to kidnap victims.

Do not be depressed if negotiation efforts appear to be taking a long time. Remember, chance of survival actually increases with time. The physical and psychological stress while a hostage could seem overpowering, but the key to your well-being is to approach captivity as a mission. Maintaining emotional control, alertness, and introducing order into each day of captivity will ensure your success and survival with honor.

During interaction with captors, maintaining self respect and dignity can be keys to retaining status as a human being in the captor's eyes. Complying with instructions, avoiding provocative conversations (political,

religious, etc.), and establishing a positive relationship will increase survivability. Being polite and freely discussing insignificant and nonessential matters can reinforce this relationship. Under no circumstance should classified information be divulged. If forced to present terrorist demands to the media, make it clear that the demands are those of the captor and that the plea is not made on your behalf. You must remember that you are an American service member; conduct yourself with dignity and honor while maintaining your bearing.

Hostages sometimes are killed during rescue attempts; consequently, you should take measures to protect yourself during such an action. Drop to the floor immediately, remain still and avoiding any sudden movement; select a safe corner if it offers more security than the floor. Do not attempt to assist the rescuing forces but wait for instructions. After the rescue, do not make any comment to the media until you have been debriefed by appropriate U.S. authorities.

APPENDIX K:
Dangerous Animals and Plants

Desert black snake

Description:
Adult length usually 0.9 to 1.2 meters; moderately stout snake. Background generally glossy black sometimes with brownish tinge; belly more pale.

Habitat:
Found in various habitats, including open desert, cultivated fields, gardens, oases, irrigated areas, and around buildings. Also barren, rocky mountain hillsides and sandy desert with sparse bushes.

Activity and Behavioral Patterns:
Nocturnal; spends much time underground. Can be very aggressive. When molested, threatened, or provoked, will hiss violently and strike.

Venom's effects:
Venom strongly neurotoxic.

Gasperetti's horned desert viper

No photograph available

Description:
Adult length usually 0.3 to 06 meter, maximum of 0.85 meter. Background generally yellowish, yellowish brown, pale gray, pinkish, or pale brown with rows of dark spots along the back. Belly whitish. Tip of tail may be black. May have a long spine-like horn above each eye.

Habitat:

Found in deserts with rock outcroppings and fine sand. Often in very arid places, however, may be found near oases.

Activity and Behavioral Patterns:

Nocturnal. Can make itself almost invisible by wriggling down into loose sand. Hides in rodent holes and under stones. When angered, rubs inflated loops of body together to make rasping hiss. Can strike quickly if disturbed.

Venom's effects:

Venom primarily hemotoxic. Local symptoms include pain, edema, redness, possible hematoma at site of bite. No fatalities reported.

Sochurek's Saw-scaled Viper

No photograph available

Description:

Maximum length of 0.8 meter. Background color gray-beige; belly whitish, usually with dark gray spots. Series of pale, dark-edged dorsal spots, which may connect in zig-zag line. Incomplete undulating pale line along sides. Distinctive gray cross pattern on top of head.

Habitat:

Found in variety of habitats in sandy, rocky, and cultivated areas. Avoids wet terrain, but may enter water if necessary.

Activity and behavioral patterns:

Primarily nocturnal and terrestrial; but climbs low bushes and trees.

Venom's effects:

Potent hemotoxin. Pain and swelling start soon after bite. Systemic bleeding may start within 6 hours after bite. Other symptoms may include vomiting, abdominal pain, regional lymph node enlargement, hematuria, and shock. Deaths recorded.

False-horned Viper

Description:
Adult length usually 0.5 to 0.7 meter, maximum of 0.9 meter. Background generally pale or bluish gray to khaki; gray or brown-gray crossbands on back. Alternating faint spots on throat and body sides. Ventral side white; tail black. Head very broad; distinct from neck. Horn, composed of several overlapping scales, above each eye.

Habitat:
Most often found in desert bush. Also found in sandy, rocky terrain, as well as burrows and crevices in elevations of up to 2,000 meters.

Activity and behavioral patterns:
Nocturnal. Sluggish, placid, less likely to bite during the day. Dangerously active and aggressive at night. When disturbed, hisses loudly but not particularly vicious. Locomotion characteristically sidewinding. Frequently hides in rodent tunnels and beneath rocks.

Venom's effects:
Primarily neurotoxic. May produce local symptoms such as minor pain, tingling, and stiffness; more serious bite causes weakness followed by ptosis. Victim may be conscious, but unable to respond due to paralysis.

Blunt-nosed or Levantine Viper.

No Photograph Available

Description:
Adult length usually 0.7 to 1 meter; maximum of 1.5 meter. Background color generally light gray, khaki, or buff, with double row of opposing or alternating spots from head to tail along back. Belly light gray to yellow, with small dark brown spots; tail pinkish brown.

Habitat:
Wide variety of habitats from marshes and plains at sea level to mountainous areas at elevations up to 2,000 meters. also semi-desert areas and rocky, hilly country at moderate elevations, with scattered bushes and adequate water supply. Often near farms and grazing areas.

Activity and behavioral patterns:
Primarily nocturnal. Sluggish. Most active and alert at night, usually very slow-moving and almost oblivious to stimuli when encountered during day. However, temperament is unpredictable; may strike quickly and savagely at any time.

Venom's effects:
Primarily hemotoxic. Bite causes sharp pain at site, followed by local swelling and necrosis. Deaths reported.

Arthropods

Scorpions

Although many scorpions in the region are capable of inflicting a painful sting, some, such as the Fat-tailed scorpion, are known to be life-threatening.

Habitat:
Found in dry and desert areas, usually in stony soils, cactus hedges and arid mountainous regions and high plateaux. Also found on steep slopes of drifting sand dunes. Avoids humidity. Often found hear human habitations (such as in cracks in walls).

Venom's effects:
One of the most potent scorpion venoms in the world. Species causes several deaths each year.

Spiders

Although there are several spider species found in the region that are capable of inflicting a painful bite, only the widow spider is considered life-threatening.

Insects

There is little specific information of medical importance regarding insects. However, nearly all countries have at least one species of moth or caterpillar with venomous spines. Some are very hairy (such as puss moths and flannel moths) and almost unrecognizable as caterpillars. Others bear prominent clumps of still, venomous spines. Contact with these caterpillars can be very painful. Some are brightly colored.

Paederus are small (usually 4 to 7 millimeters), slender rove beetles that do not look like typical beetles and have very short wing covers that expose most of their flexible abdomens. When crushed, their body fluid contains an agent that blister skin on contact. The lesions take a week to heal and the area remains painful for two weeks. The substance is extremely irritating to the eyes; temporary blindness has been reported.

Centipedes

Although area centipedes can inflict a painful bite, none are known to be life-threatening.

Millipedes

Millipedes do not bite and in general are harmless to humans. However, when handled, some larger millipedes (may be more than 50 millimeters long) secrete a very noxious fluid that can cause severe blistering upon contact; some can squirt this fluid at least 2 feet.

Plants

Croton

Other names:
Ciega-vista, purging croton.

Mechanisms of toxicity:
Long-lasting vesicular dermatitis results from contact with the toxic resin. The cathartic and purgative properties of the toxins (croton oil, a "phorbol," in leaves, stems, and seeds) causes severe gastroenteritis, even death; 20 drops potentially lethal (the oil applied externally will blister the skin). Many types covered with hundreds of sticky hairs that cling to skin on contact. Contact with the eyes can be serious.

Comments:
Croton is a wooly-haired annual herb, evergreen bush, or small tree with smooth ash-colored bark, yellow-green leaves, small flowers, and fruit.

Jimsonweed

Other names:
Thorn-apple, stinkweed, Devil's trumpet.

Mechanisms of toxicity:
The entire plant is toxic because of tropane alkaloids. Fragrance from the flowers may cause respiratory irritation, and the sap can cause contact dermatitis. People have been poisoned through consumption of crushed seeds accidentally included in flour; also through attempting to experience the hallucinogenic "high." Can kill. Jimsonweed has a quickly fatal potential.

Comments:
Originally called Jamestown weed after mass poisoning of soldiers sent to quell "Bacon's Rebellion" in 1666 ate the seeds during a severe food shortage. Jimsonweed is often confused with Angel's Trumpet.

Mole Plant

Other names:
Caper spurge, Mexican fire plant, milkweed, red spurge, poison spurge, cypress spurge, cat's milk, mala mujer, sun spurge, candelabra cactus, Indian spurge tree, pencil tree, pencil cactus, rubber euphorbia.

Mechanisms of toxicity:
Herbs, often with colored or milky sap, containing complex terpenes; irritate the eyes, mouth, and gastrointestinal tract, and many cause dermatitis on contact. Rain water dripping from the plant can contain enough toxic principle to produce dermatitis and keratoconjunctivitis; can blind. Some contain urticating hairs (skin contact breaks off ends and toxic chemicals are injected). The caper spurge has killed those who mistook the fruit for capers. The Mexican fire plant was known for medicinal properties in the first century and has killed children. Red spurge causes dermatitis. The pencil cactus has an abundant, white, acrid sap extremely irritating to the skin; has caused temporary blindness when accidentally splashed in the eyes, and has killed as a result of severe gastroenteritis after ingestion.

Comments:
Approximately 2,000 species of extremely variable form; may appear as herbs, shrubs or trees — many are cactus-like. Fruit is usually a capsule opening in three parts, each one seeded; sometimes a drupe.

Belladonna

Other Name:
Nightshade

Mechanisms of toxicity:
Berries, leaves, and roots contain tropane alkaloids that can cause death from anticholinergic poisoning.

Comments:
Perennial plants to 3 feet high. Native to Eurasia and North Africa.

Black Bryony

No Photograph Available

Mechanism of toxicity:
Primary injurious agents are calcium oxalate crystals, which cause severe irritation of oral mucosa, nausea, and diarrhea if ingested and are irritating to the skin. The attractive bright red berries are the part most likely to be eaten by children. Fresh rootstock contains a histamine like substance that has caused severe burning of the skin with erythema, painful swellings, and sometimes allergic reactions. Alkaloids, saponins and photosensitizing phenanthrene derivatives are also present in the leaves and tubers, but only in trace amounts; therefore, there is little or no effect on plant toxicity.

Comments:
Perennial herb with a twining stem found at edges of woods and hedgerows, and in thickets on rich calcareous soils. Young shoots lack calcium oxalate crystals, and are eaten in Dalmatia as a vegetable. Also used to treat rheumatic conditions in Hungary by rubbing the freshly cut, sticky, shiny surface of roots on the skin.

Castor Oil Plant

Other Name:
Castorbean

Mechanisms of toxicity:
Used to make a feed supplement; a lecithin, which is a highly toxic chemical, and some low-molecular weight glycoproteins with allerenic activity have resulted in serious poisoning. Factors making this a high-risk plant threat are its attractive nuts with a hazelnut-like taste; the highly toxic ricin present in high concentration (2-6 seeds can be fatal); and stability of ricin in the presence of gastric enzymes. The seeds are used to make necklaces, requiring boring a hole through the seed, and breaking the otherwise impermeable coat, allowing the possibility of toxin to reach the skin and enter the body through minor abrasions. Poisoning becomes evident after several hours.

Comments:
The seeds of this ancient plant have been found in Egyptian graves dating as far back as 4,000 B.C. Cultivated worldwide for 6,000 years for producing castor oil.

Yellow Heads

No Photograph Available

Other names:
Woolly-headed gnidia

Mechanisms of toxicity:
Shrubs or small trees with extremely irritating resin. The root and flower of many species are strongly purgative — is the source of the drug radjo. Some species have been shown to contain mezereine (irritant resin) and daphnine (an alkaloid).

Comments:
More than 140 species found from tropical and southern Africa to the Arabian peninsula, and from Madagascar to western India and Sri Lanka.

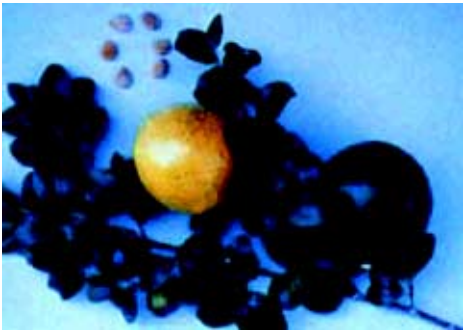
Heliotrope

Other names:
Cherry pie, scorpion's tail, Indian heliotrope.

Mechanisms of toxicity:
Contains pyrrolizidine alkaloids. Cause of large epidemics (Afghanistan, India) of illness following ingestion of bread made with flour contaminated with members of this genus. The pathologic effects (Budd-Chiari syndrome) take weeks to months, and death comes slowly over years. Chronic copper poisoning has occurred associated with this plant.

Comments:
Large genus, found worldwide (250 tropical, temperate trees and shrubs).

Strychnine



Other names:
Nuxvomica tree,
Snakewood tree

Mechanisms of toxicity:
The entire plant, including the seeds, contains the powerfully acting indole alkaloid strychnine, which can kill.

Comments:
Genus of 190 different species of trees, shrubs and vines with berry-like fruits, found in most tropical regions. Some have the reputation of having edible fruit despite dangerous seeds. It is a source of curare obtained by stripping and macerating its bark. Curare, now used as a muscle relaxant, was formerly used as an arrow poison by South American Indians.

English Yew

Other names:
Ground hemlock, American yew, Japanese yew.

Mechanisms of toxicity:
Taxine A and B, classed as steroid alkaloids, are present in all plant parts except the aril. A single chewed seed is deadly. An hour after ingestion, nausea, dizziness, and abdominal pain begin. This is followed by reddening of the lips, dilatation of the pupils, shallow breathing, tachycardia, and coma. Then the pulse slows, blood pressure drops, and death occurs through respiratory paralysis. No proven treatment exists. Emptying the stomach hours after ingestion may be helpful as leaves may not pass through the GI tract expedi-

tiously. Various clinical measures (circulatory stimulants, artificial respiration, cardiac pacemaker) have not prevented death in suicide cases.

Comments:

An evergreen shrub or small tree bearing a characteristic fleshy, red, sweet-tasting aril with a single green to black, partly exposed, hard-shelled seed within. In North America, the Japanese yew, the toxicity of which may exceed that of the English yew, has repeatedly caused fatal animal poisonings. Was once known as the “tree of death.”

APPENDIX L:
International Telephone Codes

International Telephone Codes

Algeria	213	Malta	356
Australia	61	Mexico	52
Austria	43	Morocco	212
Bahrain	973	Netherlands	31
Belgium	32	Nigeria	234
Brazil	55	New Zealand	64
Canada	1	Norway	47
China	86	Oman	968
Cyprus	357	Philippines	63
Denmark	45	Portugal	351
Djibouti	253	Qatar	974
Egypt	20	Republic of Korea	82
Ethiopia	251	Saudi Arabia	966
Finland	358	Senegal	221
France	33	Seychelles	248
Gabon	241	Singapore	65
Germany	49	Somalia	252
Greece	30	South Africa	27
Hawaii	1	Spain	34
Hong Kong	852	Sweden	46
Indonesia	62	Switzerland	41
Iran	98	Syria	963
Iraq	964	Taiwan	886
Ireland	353	Tanzania	255
Israel	972	Thailand	66
Ivory Coast	225	Tunisia	216
Japan	81	Turkey	90
Jordan	962	UAE	971
Kenya	254	United Kingdom	44
Kuwait	965	United States	1
Libya	218	Yemen	967
Madagascar	261	Zambia	260
Malaysia	60	Zimbabwe	263
AT&T (public phones)	0072-911 or 0030-911	On-base	550-HOME or 550-2USA

APPENDIX M:
Desert Operations

Effect on Personnel

There is no reason to fear the desert environment, and it should not adversely affect your morale if you prepare for it. Precautions must be taken to protect yourself and your equipment. Acclimation to the excessive heat is necessary to permit your body to reach and maintain efficiency in its cooling process. A period of 2 weeks should be allowed for acclimation, with progressive degrees of heat exposure and physical exertion. Acclimation will strengthen your resistance to heat, but there is no such thing as total protection against the debilitating effects of heat. During initial Operation DESERT SHIELD deployments, units started their day early, took a break from 1100-1500, and resumed working/training late afternoon and early evening. The sun's rays, either direct or bounced off the ground, affect your skin and can also produce eyestrain and temporarily impair vision. Overexposure to the sun will cause sunburn. In all operational conditions, you should be fully clothed in loose garments. This will also reduce sweat loss. The hot, dry air found in this region causes high perspiration rates, but the skin usually appears dry, allowing evaporation to go unnoticed. Being fully clothed helps you retain the cooling moisture on your skin. Remember: the sun is as dangerous on cloudy days as it is on sunny days; sunscreen is not designed to give complete protection against excessive exposure; climatic stress is a function of air temperature, humidity, air movement, and radiant heat. Sunglasses should be worn, as well as lightweight, loose-fitting clothes. Developing a suntan gradually (5 minutes per day) will help prevent burning.

Wind is a constant factor in desert environments. The combination of wind and dust or sand can cause extreme irritation to the mucous membranes, chapping the lips and other exposed skin surfaces. Eye irritation is a frequent complaint of vehicle crews, even when wearing goggles.

Fast, windblown sand can be extremely painful on bare skin, another reason one should remain fully clothed. Bandannas should be worn to cover the mouth and nose; Operation DESERT STORM personnel experienced the effect of being constantly sandblasted.

Potable water is the most basic need in the desert. Approximately 75 percent of the human body is fluid. A loss of 2 quarts decreased efficiency by 25 percent and a loss of fluid equal to 15 percent of body weight is usually fatal. In desert terrain, approximately 9 quarts of water per person per day is needed. It is important to separate drinking and non-drinking water. Drinking any water from an untested source is dangerous, and will likely make you sick. In very hot conditions, it is better to drink smaller amounts of water more often than to take large amounts occasionally. As activity increases, you should drink more water. Alcohol and smoking cause dehydration and should be avoided. One cannot be trained to adjust permanently to a reduced water intake. An acclimated person will need as much water because of sweating more readily than a new arrival. If the water ration is not sufficient, physical actively must be reduced, or strenuous activity should be restricted to cooler parts of the day.

Dehydration is very dangerous. Thirst is not an adequate warning of dehydration because the sensation may not be felt until there is a body deficiency of 1 to 2 quarts. Very dark urine is often a warning of dehydration. Leaders must be aware of troops' water consumption, especially during the acclimation period. Those who do not monitor their water intake may be subject to injuries from excessive loss of body fluid. Injuries include heat exhaustion (causes dizziness and confusion), salt deficiency (results in fatigue, nausea, and cramps), and heatstroke (where the body's cooling system breaks down and can lead to death).

The desert is not a pristine environment. Diseases commonly found in a desert environment include plague, typhus, malaria, dysentery, cholera, and typhoid. Vaccines can help prevent typhoid and cholera. Proper sanitation and cleanliness can prevent the spread of typhus and plague.

Because of water shortages, sanitation and personal hygiene are often difficult in arid regions. If neglected, sanitation and hygiene problems may cripple entire units. Dysentery can be caused by drinking impure water. Minor cuts and scratches must be checked to prevent infections. As previously mentioned, heat illnesses are common in desert environments; insufficient water, dietary salt, or food (people often lose the desire for food in hot climates) increases susceptibility to heat illness.

From the psychological perspective, the monotony of the desert, its emptiness, and the fear of isolation can eventually affect personnel. The relatively constant climatic conditions add to this monotony, and boredom lowers morale. Commanders in the Saudi desert indicated that the first weeks of the deployment were especially tough in this regard. Intensive training in preparation for hostilities is the best answer to reduce boredom and desert fatigue.

Effect on Equipment

The extreme conditions in an arid environment can damage military equipment and facilities. Temperature and dryness are major causes of equipment failure, and wind action lifts and spreads sand and dust, clogging and jamming anything that has moving parts. Vehicles, aircraft, sensors, and weapons are all affected. Rubber components such as gaskets and seals become brittle, and oil leaks are more frequent. The desert takes a particularly heavy toll on tires. Tires absorb the surface heat, their structure is weakened, and jagged rocks can cause punctures. Tire pressure must be checked and adjusted constantly. The large temperature variations between night and day can change the air density in the tire; tires deflate at night and expand in the day.

Vehicle engines are subject to greater strain because of overheating. Every 10 degree rise in temperature (above 60°F) will cause a 1 percent loss in power, which can translate into a 6-7 percent loss in the heat of a summer day. Lower gears must be used frequently to negotiate the loose sandy soil, and this strains both engines and transmission systems. Vehicle cooling systems and lubrication systems are interdependent, and a

malfunction by one will rapidly place the other under severe strain. Overheating engines lead to excessive wear, and then to leaking oil seals in the power packs. Temperature gauges will read between 10-20 degrees hotter than normal. Oil levels must be constantly checked due to seal problems. Radiators and flow areas around engines must be kept clean and free of debris. Cooling system hoses must be kept tight to avoid cooling system failure.

The desert presents many serious challenges. Batteries (both vehicle and radio) do not hold their charge efficiently in intense heat. Ammunition must be kept away from direct heat and sunlight. If it can be held by bare hands, it is safe to fire. White phosphorus will liquify at temperatures above 111 degrees (F), which will cause unstable flight unless stored in an upright position. Modern forces rely heavily on the electronics in computers, radios, sensors, and weapon systems. The intense heat of the desert adds to the inherent heat that electrical equipment generates. Even in temperate regions, air conditioning is often required for this equipment to operate properly. Radio transmission range degradation is a fact of life in extremely hot climates, and will most likely occur in the heat of the day. Heat must be considered with respect to weapon effectiveness as well. Automatic weapons and rapid firing tank and artillery guns overheat faster, increasing barrel wear and the potential for malfunctions.

Besides heat, dust and sand are very serious impediments to the efficient functioning of equipment in the desert. Dust adversely affects communications equipment, such as amplifiers and radio teletype sets. Ventilation ports must be checked to ensure dust is not clogging the air path. Radios must be kept as clean as possible. The winds blow sand into engines, fuel, and moving parts of weapons, which can reduce equipment life by up to 80 percent. Within jet engines, sand particles can actually melt into glass, deadlining the equipment. Lubrication in mechanical equipment and weapons must be carefully monitored, and kept to the absolute minimum in the case of exposed or semi-exposed moving parts. Sand mixed with oil can form an abrasive paste. Lubrica-

tion fittings and filters should be checked frequently. Insulated wire can be damaged over time. The sandblasting also affects optical glass and windshields. Protective paints and camouflage become worn quickly.

Effect on Combat Operations

The key to success in desert operations is mobility, and this was clearly evident in the ground operations of Operation DESERT STORM. Trafficability and cross-country movement are critical to the tactics in the desert. Trafficability is generally good in the desert, but it cannot be assumed. Salt marshes, wadis, shifting sand, and/or rocky areas can render some areas unstable. Given ample fuel and water, however, areas can be circumvented.

Because of the loose surface material, movement can easily be detected because of the sand and dust kicked up. To avoid this, movement at night is an option. The dust is still a problem, but temperatures are cooler, and surprise is not necessarily surrendered.

Logistical support is more critical in arid regions because of the few manmade features and the lack of resources available from the terrain. Logistics weighs heavily on desert operations, but it must not dictate the plan. A delicate balance must be struck.

Notes

Notes

Notes

Notes

Notes

Notes

Notes

Notes