Oman Country Handbook

This handbook provides basic reference information on Oman, 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 Oman.

The Marine Corps Intelligence Activity is the community coordinator for the Country Handbook Program. This product reflects the coordinated U.S. Defense Intelligence Community position on Oman.

CONTENTS

APPENDICES

ILLUSTRATIONS


IRAN
Qeshm
Strait of Hormuz
IRAN
BAHRAIN
QATAR
Bandar-e Lengeh
Al Khasab
Ra's Musandam
Ra's al Khaymah
Jask
Al Khawr
Persian Gulf
Umm al Qaywayn
Diba al Hisn
Dukhan
DOHA
Ash Shariqah
Ajman
Al Wakrah
Dubayy
Al Fujayrah
Gulf of Oman
ABU DHABI
Al Buraymi
Mahdah
Suhar
Al Khaburah
As Sib
MUSCAT
Sabkhat Matti
UNITED ARAB EMIRATES
Qurayyat
'Ibri
Nazwa
Izki
Ibra'
Boundary not defined
Mudayrib
Sur
Fahud
Adam
Al Kamil
Al 'Ubeylah
Jibal
As Suwayh
SAUDI ARABIA
Ghaba
Umm as Samim
Dawwah
Masirah
Khaluf
Kalban
Hayma'
Duqm
Boundary not defined
Arabian Sea
Wadi Sahan
Dawkah
Sawqirah
Marmul
Sharbatat
YEMEN
Habarut
Mudhay
Thamarit
Khuriya Muriya
Raysut
Salalah
Sadh
Al Ghaydah
OMAN
National capital
City
International border
Primary road
0 50 100 150 km
0 50 100 mi

Oman

KEY FACTS

Official Name.

Conventional long form. Sultanate of Oman
Conventional short form. Oman
Local long form. Saltanat Uman
Local short form. Uman

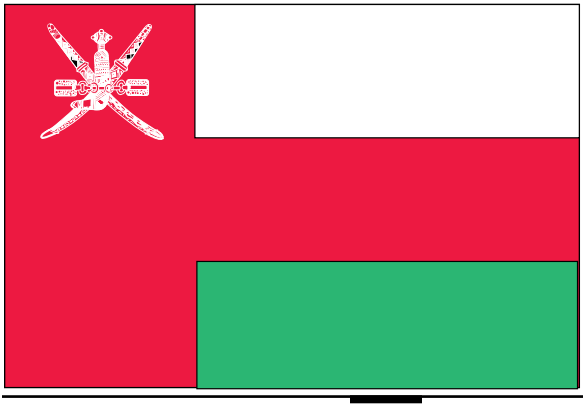
Flag. Three horizontal bands of white, red, and green of equal width with a broad vertical red band on the hoist side; the national emblem (a khanjar dagger in its sheath superimposed on two crossed swords in scabbards) in white is centered near the top of the vertical band

Chief of State and Head of Government. Sultan and Prime Minister Qaboos bin Said al-Said

Capital. Muscat

Population. 3,311,640

Languages. Arabic (official), English, Farsi, Baluchi, Urdu, and Indian dialects are also found



National Flag

Currency. Omani rial (OMR); 1 rial=1,000 baiza. Note denominations 1, 5, 10, 20, 50 rials and 100, 200, 500 baiza; coin denominations 5, 10, 25, and 50 baiza.

Exchange rate. US$1=OMR0.3845 The rial is pegged to the dollar; the conversion rate does not change

Time Zone. UTC (formerly GMT) + 4 hours.

Fiscal year. Calendar year (Islamic calendar)

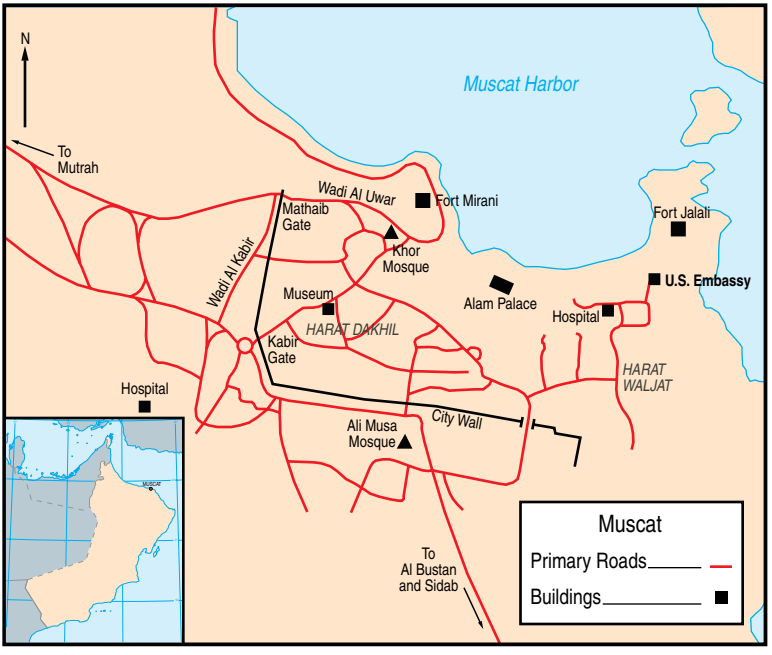
U.S. MISSION

U.S. Embassy

Location	P.O. Box 202, Medinat Al Sultan Qaboos 115 Sultanate of Oman
Telepone	(968) 698-989 (968) 699-049 after 1600 Telex: 3785 Fax [968] 604-316
Web Address	http://www.usia.gov/posts/muscat

Tourism

Tourism was restricted until 1985. Now it is still strictly controlled. Attractions, apart from the capital itself, include Nizwa, the ancient capital of the interior, Dhofar, and the forts of Nakhl, Rustaq, and Al-Hazm. In 1994 Oman had 358,000 visitors, and tourist receipts for that year totaled US$88 million.



U.S. Embassy

Travel Advisories

The Department of State issues travel advisories concerning serious health or security conditions that may affect U.S. citizens. Current advisories are available from the embassy or consulates. Military personnel should leave a detailed itinerary with their commanding officers if they plan to travel.

Passport and Visa Requirements

A valid passport and visa are required for entry into Oman unless a "Non-Objection Certificate" is arranged through an Omani

sponsor prior to entry. Omani embassies and consulates now issue 2-year, multiple-entry tourist and business visas to qualified U.S. personnel. Evidence of yellow fever immunization is required if the traveler enters from an infected area. To obtain a visa or details on entry and travel requirements, contact the Embassy of the Sultanate of Oman, 2535 Belmont Road N.W., Washington, D.C. 20008, telephone (202) 387-1980/2.

Customs

Travelers entering Oman may not carry with them firearms, ammunition, or pornography; all are subject to seizure. No more than one bottle of liquor is permitted per non-Muslim adult. Unaccompanied baggage and shipments of household goods are also subject to inspection. Books, video tapes, and audio tapes may be reviewed prior to being released to the owner. A copy of the packing list is required to clear effects through customs.

GEOGRAPHY AND CLIMATE

Geography

Statistics

Boundaries

North (undefined)	United Arab Emirates 410 kilometers (255 miles)
Northwest (undefined)	Saudi Arabia 676 kilometers (420 miles)
Southwest	Yemen 288 kilometers (179 miles)
East (coastline)	Arabian Sea 2,092 kilometers (1,300 miles)

Land Area 212,470 square kilometers (132,020 square miles)

Comparative Slightly smaller than Kansas

Middle East

Topography

Oman lies on the southeast corner of the Arabian Peninsula, facing the Gulf of Oman to the northeast and the Arabian Sea to the south. It has 2,092 kilometers (1,300 miles) of coastline. It controls the Musandam Peninsula to the north, which is separated from the rest of Oman by a portion of the United Arab Emirates (UAE). The Musandam Peninsula overlooks the strategically important Strait of Hormuz. On the inland side, the country extends into a desert, where the undefined border with Saudi Arabia lies.

The Sultanate extends inland from the Gulf of Oman to the borders of *Rub' al Khali* (Empty Quarter) across three geographic divisions — a coastal plain, range of hills, and plateau. The coastal plain varies in width from 16 kilometers (10 miles) near Suwaiq to practically nothing near Mutrah and Muscat, where the hills descend abruptly into the sea. The large desert central plateau occupies most of the country except for the mountains in the north and hills in the south. Very little vegetation or water is found there.

Northern Oman is dominated by the Hajir Mountains, which rise to over 3,300 meters (10,830 feet), dropping to a narrow coastal plain in the north and the desert plain in the interior. The southern extreme of Oman rises from the desert plain into the Dhofar hills.

Masirah Island, which consists of 132 square kilometers (51 square miles) of barren rocky land, sits offshore in the Arabian Sea.

Climate

Oman has a desert climate with exceptionally hot and humid months from April to October, when temperatures can reach

Topography

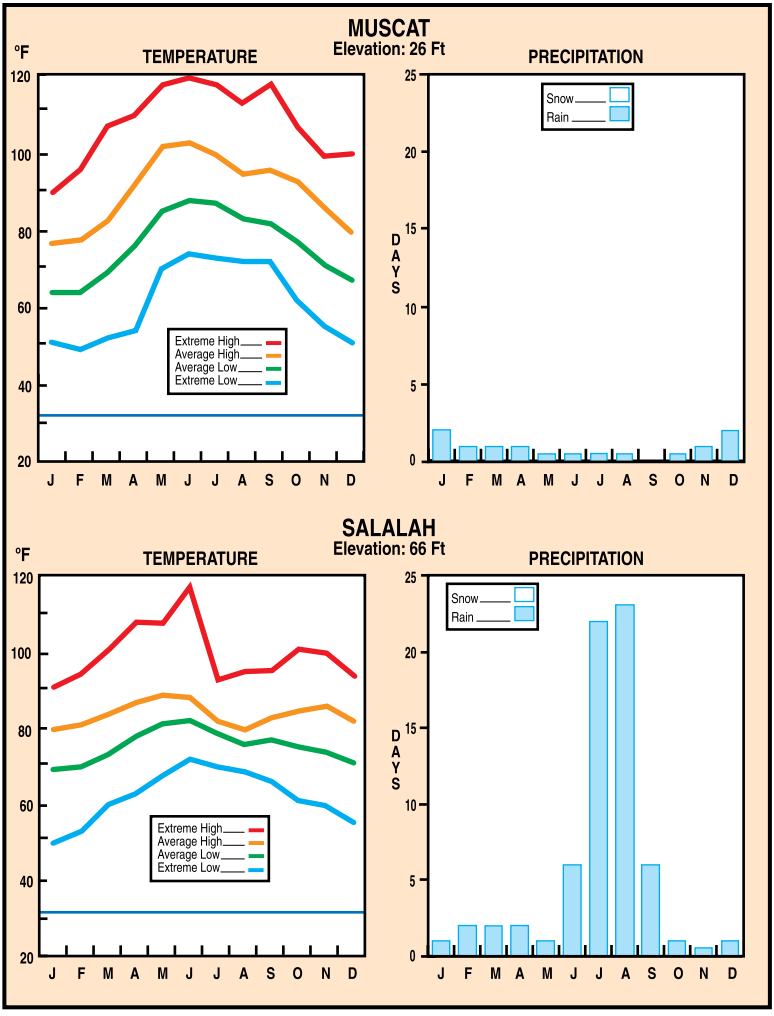
47°C (117°F). From December to the end of March, the climate is more temperate. The regional variations between the northern and southern parts of the country, and the mountainous and pla-

Land Use

teau areas, are marked. The Hajir Mountains and the higher part of the Jebel Akhadar plateau, both in the north, receive higher rainfall amounts and have slightly lower temperatures due to their elevation. The resulting climate is more temperate than that found elsewhere in Oman. Average annual rainfall in the upper Hajir Mountains is a modest 50 centimeters (20 inches), but this far exceeds most of the country's rainfall of 8 to 10 centimeters (3 to 4 inches) annually. The interior desert plateau is very hot and dry.

Although the temperatures are higher further inland, the climate is made more bearable because the humidity decreases. The southern tip of the country is also very hot and humid. It receives more rain due to light monsoon conditions between June and September.

Hajir Mountains



Muscat and Salalah Weather

Environment

Oman has two primary environmental concerns. The first concern is that Oman's fresh water aquifers are becoming increasingly contaminated by saltwater intrusion. The second is that the oil spills on the coastal regions have hurt the traditional fishing industry.

TRANSPORTATION AND COMMUNICATION

Transportation

Roads

A network of adequate graded roads links all the main centers of population; only a few mountain villages are not accessible by four-wheel-drive vehicles. The main road connects Muscat in the north with Salalah in the south. Unsealed roads of varying conditions connect the remainder of the country.

Railroads

Oman does not have a railway network.

Rural Highway

Maritime

Oman has three major ports, two in the North, *Mina Qaboos* (Muscat) and *Mina al Fahal* (Wudan) for light shipping. The other port is in the South, *Mina Raysut* (Salalah)

Port of Muscat (*Mina Qaboos*). Port of Muscat (Mina Qaboos) has 13 berths, nine mobile cranes as well as equipment for roll-on-roll-off-operations. Berths One and Two have three 40-ton cranes. Berths Four and Five are 366 meters (1,200 feet) long, have two 35-ton cranes available for off-loading and are 10.9 meters (35.8 feet) deep. The port operates one 150-ton and one 70-ton crane and seven 3-30-ton cranes. Water is available by barge and shore hydrants. Seeb International Airport is 35 kilometers away.

Berth	Length, m (ft)	Depth, m (ft)
1 and 2	458 (1,500)	13 (43)
3	228 (750)	11 (36)
4 and 5	366 (1,200)	10.9 (35.8)
6	183 (600)	10 (32.8)

Muscat

Berth	Length, m (ft)	Depth, m (ft)
7 and 8	183 (600)	9.6 (31.5)
9	122 (400)	4 (13)
10	183 (600)	4 (13)
11	223 (731)	9 (30)
12	160 (525)	8 (26)
13	152 (500)	2.2 (7)

Mina Raysut. Mina Raysut, near Salalah, is an all-weather port with container facilities, two 15-ton stationary cranes, and two 6-ton stationary cranes. Mobile cranes, ranging from 5 to 70 tons, are available. Their is an oil pier with 12-meter (39-foot) draft for tankers up to 35,000 dwt. Salalah Airport is 26 kilometers (16 miles) away. Water is available from a shore connection.

Mina Al Fahal. Mina Al Fahal has three single buoy moorings for transferring oil to tankers and two inshore berths for coastal tank-

Container Cranes, Mina Qaboos

ers. The inshore berths are at a depth of 4 meters (13 feet). Water is available by barge. Seeb International Airport is 30 kilometers (19 miles) away.

Transportation

Berth	Quay		Capacity
	Length, m (ft)	Depth, m (ft)	
1, 2, 3	520 (1,706)	9.5 (31)	15,000 dwt
4	200 (656)	8 (26)	6,000 dwt
5, 6, 7, 8	460 (1,509)	4 (13)	15,000 dwt
Multiple	260 (853)	3 (19)	Launches, tugs, trawlers
dwt = dead weight tonnage			

Civil Aviation

Domestic and international flights operate from Seeb and Salalah International Airports. Air service in Oman is provided by Gulf Aviation, Ltd, jointly owned by Bahrain, Oman, Qatar, and Abu Dhabi. International service is available to Europe, the United States, Africa, and the Middle and Far East. Oman Aviation Services is Oman's domestic airline. It is an air-charter operation connecting Oman's smaller locales. Most towns have a small airstrip.

Name, Coordinates	Nearest Pop. Center	Runway, measurements in m (ft)		
		Elevation	Length	Surface
Muscat, 23°35.6'N 58°16.8E	Ruwi 32 km (20 mi)	14.7 (48)	3,585 (11,762)	concrete/ asphalt
Salalah, 17°2.2'N 54°5.3E	Salalah 3 km (2 mi)	22.3 (73)	3,340 (11,022)	asphalt, LCN 100

Communications

Radio and Television

Radio Oman, operated by the Ministry of Interior, broadcasts 20 hours daily in Arabic, 14 hours in English. The BBC has a relay station on Masirah Island, which provides reception for 6 hours daily. Personal shortwave receiver is the only way to receive Voice of America broadcasts. Fourteen radio stations operate in Oman, 3 AM, 9 FM, and 2 shortwave (SW). As of 1992, there were 1.043

million privately owned radios in Oman. Thirteen television stations operate in Oman, in addition to 25 repeater stations. As of 1992, their were 1.195 million televisions in the country.

Telephones

According to a 2006 estimate there were 278,300 telephones in Oman. The local telephone system is good. International telephone and telegraph services are available with occasional delays. In 1992 it cost US$5.00 per minute to call the United States, although calls from the United States to Oman cost considerably less.

The telephone system uses open wire, microwave, radiotelephone communications stations, and limited coaxial cable. The domestic telephone system is linked through open wire, microwave, radiotelephone communications, and a domestic satellite system with eight earth stations. The international system uses two Intelsat (Indian Ocean) and one Arabsat satellites for communication.

Newspapers

Oman publishes four major daily newspapers with a combined circulation of 76,060. Two of the papers, *Al-Watan (The Nation)*, circulation 23,500, and *Oman Daily*, circulation 15,560, are in Arabic. The *Oman Daily Observer*, circulation 22,000, and the *Times of Oman*, circulation 15,000, are published in English. Foreign newspapers and magazines are available in the larger hotels in Muscat and are usually a few days old. These publications are also available in the Holiday Inn hotel in Salalah. A bimonthly handbook, entitled *Oman Today*, is widely available. Each issue lists clubs, activities, restaurants, and entertainment.

Satellites

Oman has eight local satellite earth stations, two Intelsat earth stations (Indian Ocean), and one Arabsat earth station.

CULTURE

People

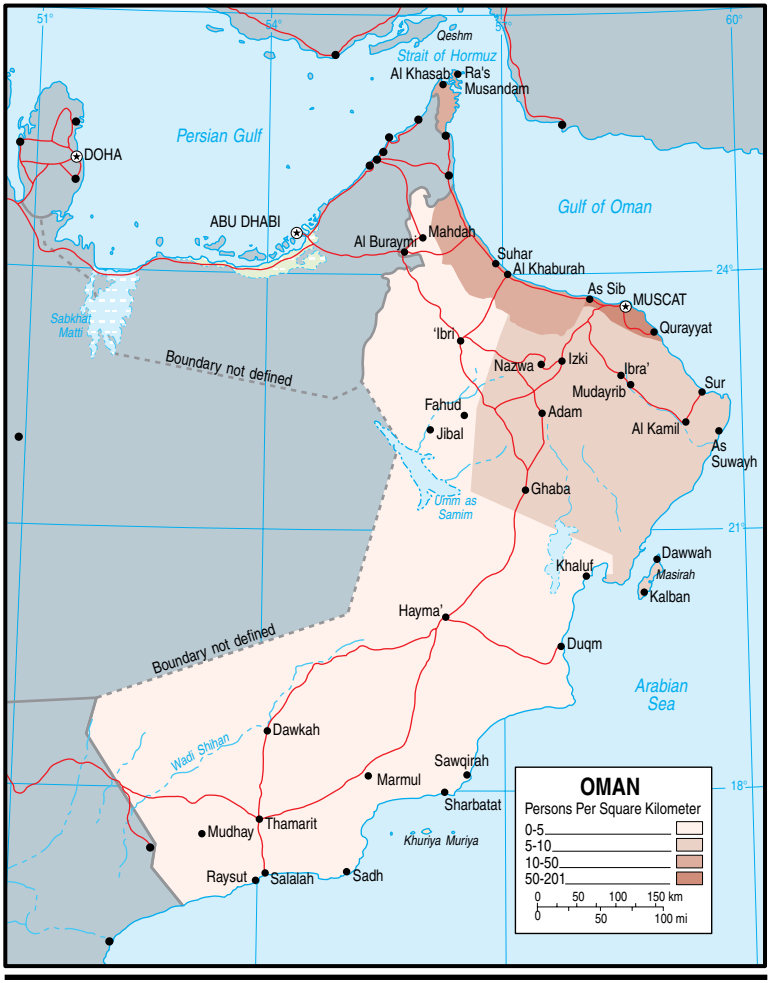
The population of Oman is almost entirely Arab (90 percent) with minority groups of Baluchis, Iranians, and Africans. The first official census was held in 1993. Most people live on the Batinah coastal plain in the north, where 40 percent of the cultivated farmland is found, and Salalah plain in the southern province of Dhofar. Agriculture employs about 70 percent of the population, but that number is declining as the urban population is increasing.

At one time, Oman had one of the highest percentages of nomads of any country in the world. The remainder of the population is divided between farmers and townspeople. Many Baluchis and Indians work as laborers and shopkeepers, respectively, in Muscat and Matrah, the principal ports in the capital area.

Education

In the last 25 years, education in Oman has undergone an amazing transformation. From three schools in 1970, schools of various types and levels in Oman now number 976, providing education to more than a half million students in every corner of the country. Primary and secondary education is free in government schools. Oman also has a British school, a British-American academy, and many Indian schools for the expatriate populations. Oman's first national university was opened in 1986. Sultan Qaboos University, with its six Colleges of Science, Medicine, Engineering, Arts, Agriculture, and Education

and Islamic Studies, is the apex of the country's educational system. In addition, there are numerous teacher training colleges and vocational training institutes preparing students for diverse careers.



Population Density

Religion

In circa AD 630, Oman was one of the first countries to embrace Islam, with the Ibadhi sect becoming prominent. Islam remains the foundation of the country's legal and political systems. Omani society is traditionally Islamic, yet reasonably tolerant of other religions. Ibadhi sect followers make up 75 percent of the Arab population; the remaining 25 percent is divided between Sunni, Shi'a, and Wahabi Muslims. The Ibadhis may have early origins in the Khawarij, a faction that disagreed with Ali, the fourth Caliph of Islam. Many of the traditions and rituals found in Sunni and Shi'a Islam are not followed by the Ibadhis, who stress the importance of proper belief, righteous conduct, and the supreme authority of the Koran. Of the world's 500 million Muslims, only 1 million are Ibadhi; most of them live in Oman. Outside Oman there are only scattered Ibadhi communities in North Africa, India, and Pakistan. Through much of Ibadhi history, there has been an Imam (leader). In theory, all believing males selected the Imam, but in practice, tribal leaders selected the Imam. His duty was

Grand Mosque

to rule the true Muslims, (i.e., the Ibadhis) and force heretics—including the Sunnis and Shi'as—to follow him. Unlike Sunni and Shi'a Muslims, the Ibadhi sect believes that any Muslim with the right qualities can be elected Imam. Differing religions brought to Oman by expatriates are tolerated.

Shari'a, or Islamic law, is compiled from the following sources: the Koran, revelations of Allah to the prophet Mohammed; *Hadith*, sayings of Mohammed; sunnah, traditions; consensus among the ulema (Islamic scholars); and analogy. Shari'a contains Islamic doctrines of monotheism, angels, prophets, revelations (i.e., books), predestination, and final judgment. There are five "pillars" (i.e., practices) prescribed by Shari'a that are observed by all Muslims—*Shahadah*, a declaration of faith; *Doa*, ritual prayer and ablutions performed five times daily; *Zakah*, almsgiving; Ramadan, fasting during daylight hours during the month of Ramadan; and Hajj, the pilgrimage to Mecca once in a lifetime. Prayer times are as follows: *fajr* (dawn), *dhuhr* (noon), *asr* (afternoon), *maghrib* (dusk), *isha* (night). Muslims may pray inside a mosque or outside, even on a busy sidewalk or in the desert. The only stipulation is that they pray facing Mecca.

Customs

Although the Arab nations are 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 distinguish them from individual behavior.

Gestures

Arabs make liberal use of gestures when they talk, particularly when enthusiastic about the subject. Hand and facial gestures are an important part of Arab communication. Recognizing them is necessary to gain the full meaning of what is being said. Listed below are some of the most common gestures used in Arab countries. There are variations among countries, but most are widely used. It is not recommended that you use these gestures but learn to recognize them.

- Several gestures can indicate "No"—moving the head slightly back and raising the eyebrows, moving the head back and chin forward, or moving the chin back slightly and making a clicking sound with the tongue.
- After shaking hands, placing the right hand over the heart indicates respect and sincerity.
- Holding the right hand out, palm downward, and moving it as if scooping something away from you indicates "Go away."
- Kiss the forehead, nose, or the right hand of a person who is being greeted shows extreme respect.
- "That's enough, thank you," may be indicated by patting the heart a few times.
- To beckon another person, all fingers wave with the palm facing downward.
- Holding the right hand out, palm upward, and touching the thumb to all of the fingertips and then moving the hand up and down slightly indicates "Have patience, slow down, listen."

Basic Arab Religious Attitudes

These are some religions attitudes shared by Arabs:

- Everyone believes in God, acknowledges His power and has a religious affiliation.

- Humans cannot control all events; some things depend on God (i.e., fate).
- Piety is one of the most admirable characteristics in a person.
- Religious tenets should not be subjected to liberal interpretation or modification, which can threaten established beliefs and practices.

Basic Arab Self-perceptions

Below are some common perceptions among Arabs:

- Arabs are generous, humanitarian, polite, and loyal. Several studies have demonstrated that Arabs see these traits as characteristic of themselves and as distinguishing them from others.
- Arabs have a rich cultural heritage. This is illustrated by their contributions to religion, philosophy, literature, medicine, architecture, art, mathematics, and the natural sciences.
- Although there are many differences among the Arab countries, the Arabs are a clearly-defined cultural group, members of the Arab Nation (*Al Umma Al Arabbiya*).
- The Arabs see themselves as victimized and exploited by the West. For them, the experience of the Palestinian people represents the most painful and obvious example.
- Indiscriminate imitation of Western culture, by weakening traditional family ties and social and religious values, will have a corrupting influence on Arab society.
- Many Westerners misunderstand and wrongly characterize Arabs.

Friendship

Friendship to an Arab does not necessarily mean the same thing as it does to a Westerner. To a Westerner, a friend is someone whose company is enjoyed, who does things for us, and who helps us in

time of need without expectation of recompense. Among Arabs also, a friend is someone whose company is enjoyed. Equally important to the relationship, however, is the duty of a friend to give help and favors to the best of his ability.

Differences in expectations can lead to misunderstandings and, for both parties, a feeling of being let down. A Westerner may think that he has been "set up" to do favors, and the Arab concludes that no Westerner can be a true friend. To avoid such feelings, it is important to understand how both sides interpret when one person tells the other that he is his "friend."

For an Arab, "good manners" require that one never openly 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 direct "No." If an Arab friend asks for a favor, do it if possible—this keeps the friendship flourishing. If it is unreasonable, illegal, or too difficult, the correct response is to listen carefully and suggest that while doubtful about the outcome, you will try to help. Later, express regret and offer to do something else for him in the future.

The concept of what constitutes personal behavior or a personal question is culturally determined; in this there are marked differences between Westerners and Arabs. Arabs like to discuss money and may ask what a person paid for things or what their salary is. If they are unmarried or, if married but without children, Arabs may openly ask why. Arabs consider it unusual for an adult to be unmarried, because marriage is arranged for most people by their families and is expected of everyone. Arabs place special significance on children, particularly male children, because they enhance prestige and assure care of the parents in old age. Questions that Arabs consider too personal are those pertaining to women in

the family (if asked by a man). It is best to ask about the family, not a person's wife, sister, or grown daughter.

Professional Relationships

Arabs operate by personal relations more than by time constraints, mission requirements, professional skills, or anything else. One of the keys for establishing good working relations with an Arab is to establish a good personal relationship. Appearances are also maintained through fairly strict and formalized rules of behavior and politeness. For an Arab, there is little satisfaction in immediately getting down to business. Instead, the Arab has a strong sense of the formal social occasion and protocol. An initial business meeting may be the time to demonstrate the ideal conceptions of Islamic and Arab civilization. It is not necessarily a time for objective analysis, pragmatic application, and problem solving. There is little virtue in a frank exchange. Therefore, protocol is emphasized through polite conversation and the serving of refreshments. Tending to business may occur later during the meeting or a more informal setting such as dinner.

Omani Man

Criticism, even constructive criticism, can threaten or damage an Arab's honor; it may be taken as a personal insult. A Westerner would do well to take a very indirect approach toward

Arabs with any corrective remarks and to include praise of any good points and assurances of high regard for the individual himself.

Sensitive Subjects

Arabs favor two subjects in social conversation—religion and politics. Both can be risky for the Westerner. Muslims enjoy discussing religion with non-Muslim Westerners because of their curiosity about Western religious beliefs, and because they feel motivated to share information about Islam with friends as a favor to them. They are secure in their belief about the completeness of Islam, since it is accepted as the third and final refinement of the two previously revealed religions, Judaism and Christianity. They like to teach about Islam, which eventually leads to the question, "why don't you consider conversion?" A Westerner may feel uncomfortable and wonder how to give a gracious refusal. The simplest, most gracious and acceptable answer is to state that you appreciate the information and respect Islam highly as a religion, but that you cannot consider conversion because it would offend your family.

Arabs like to talk about politics with Westerners and readily bring up controversial issues such as the Palestinian problem and the legacy of colonialism and imperialism. However, they are not usually prepared for frank statements of disagreement with their positions on these issues. The safest response, if you cannot fully agree, is to confine yourself to neutral statements and wait for the subject to change, expressing concern for the victims of war and hope of a lasting peace.

Personal Space

Westerners like to have a certain distance or space between themselves and another person. Arabs need to feel the presence of other people. Their space is much more narrow than that of a Westerner.

It is said that some Arabs like to feel the breath of the person to whom they're speaking on their faces. The Westerner tends to back up when the Arab stands close, but the Arab merely steps forward. If the Westerner continues to back away, the Arab continues to step closer, maybe wondering how he has offended the Westerner. This situation has been dubbed the "diplomatic shuffle."

Hospitality

Arabs are generous in the hospitality they offer to friends and strangers alike, and they admire and value the same in others. Generosity to guests is essential for a good reputation. It is an insult to characterize someone as "stingy" or "inhospitable."

Arabs assume the role of host whenever the situation calls for it — in their offices, homes, or shops. A guest never stays long without being offered something to drink, and it is assumed that the guest will accept at least a small quantity as an expression of friendship or esteem. No matter how much coffee or tea the guest has had elsewhere, this offer is never declined. Shops and business offices have employees whose sole duty is to serve beverages to guests. When served a beverage, accept and hold the cup with the right hand.

Omani Woman

Arabs expect to be received with hospitality when they are guests; the host's personal image and status is affected by the guest's perceptions of hospitality.

Family and Social Interaction

Arab families are often large, and family plays an major role in a person's life. They are the basic unit of society and are very strong and close knit. The father is the head of the family (i.e., a patriarchal system). Although the mother's activities may be limited to housework and taking care of the children, she may exercise considerable influence in the home. Few women work outside the home, but the number is increasing. All activities revolve around family members and family life, and any achievement advances the reputation of the entire family. One's family is a source of reputation and honor, as well as financial and psychological support.

Omani Boy

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 lead to false impressions or gossip. Westerners must be aware of

Village

the restrictions on contact between men and women and then consider their own appearance in front of others. Arabs quickly gain a negative impression of those who behave with too much familiarity toward a person of the opposite sex. A Western male should never approach an Arab woman with the intent of making her acquaintance or in pursuing a personal relationship.

The public display of intimacy between men and women is strictly forbidden by the 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.

Rules of Etiquette

Listed here are some more rules of etiquette in Arab culture.

- Sit properly. Slouching, draping legs over the arm of a chair, or otherwise sitting carelessly when talking with someone com-

municates a lack of respect for that person. Never cross legs on top of a desk or table when talking with someone.

- Sitting in a manner that allows the soles of one's shoe to face another person is a very serious insult. Always sit with both feet on the floor.
- When standing in conversation with someone, leaning against a wall or keeping the hands in pockets is taken as a lack of respect.
- Failure to shake hands when meeting someone or saying goodbye is considered rude. When a Western man is introduced to an Arab woman it is the woman's choice whether to shake hands or not; she should be allowed to make the first move.
- Casual dress at social events, many of which call for rather formal dress (a suit and tie for men, a dress and high heels for women), may be taken as a lack of respect for the host. There are, of course, some occasions on which casual dress is appropriate.
- One who lights a cigarette in a group must be prepared to offer them to everyone.
- Men stand when a woman enters the room; everyone stands when new guests arrive at a social gathering and when an elderly or high-ranking person arrives or departs.
- Men allow women to precede them through doorways and offer their seats to them if no others are available.
- If guests admire something small and portable, an Arab may insist that it be taken as a gift. Guests need to be careful about expressing admiration for small, expensive possessions.
- Gifts are given and accepted with both hands and are not opened in the presence of the donor.
- When eating with Arabs, particularly when taking food from communal dishes, the left hand is not used (the left hand is considered unclean).

- At a restaurant, Arabs almost always insist on paying, particularly if there are not many people in the party or if the occasion is business-related. It is appropriate to give in graciously after a ritual gesture to pay and then to return the favor later.
- People, particularly women, should not be photographed without their permission.
- Most Arabs do not like to touch or be in the presence of household animals, particularly dogs. Pets should be kept out of sight when Arab guests are present.

It is impossible, of course, to learn all the rules of a culture. The safest course of action is to imitate. In a social situation with Arabs, never be the first to do anything!

MEDICAL ASSESSMENT

Infectious Disease Risks to Deployed Personnel

The National Center for Medical Intelligence (NCMI) assesses Oman as and Intermediate Risk for infectious diseases, with an overall disease risk that will adversely impact mission effectiveness unless force health protection measures are implemented.

The following is a summary of the infectious disease risk in Oman. Risk varies greatly depending on location, individual exposures, and other factors. Details are contained in *Infectious Disease Risk Assessments*, produced by NCMI, available at http://www.ncmi.detrick.army.mil.

Food- or Waterborne Diseases

Sanitation varies with location, but typically is well below U.S. standards. Local food and water sources (including ice) may be con-

taminated with pathogenic bacteria, parasites, and viruses to which most U.S. service members have little or no natural immunity.

Diarrheal diseases can be expected to temporarily incapacitate a high percentage of personnel within days if local food, water, or ice is consumed. Hepatitis A and typhoid fever can cause prolonged illness in a smaller percentage. In addition, viral gastroenteritis (e.g., norovirus) and food poisoning (e.g., Bacillus cereus, Clostridium perfringens, and Staphylococcus) may cause significant outbreaks.

Vector-borne Diseases

During warmer months (typically April through November), ecological conditions primarily in rural areas support arthropod vectors (including mosquitoes, ticks, and sand flies) with variable rates of disease transmission. As of 2003, Oman was considered malaria-free. However, imported cases still occur.

A variety of vector-borne diseases occur at low or unknown levels; as a group, these diseases may constitute a potentially serious operational risk. Personnel exposed to mosquitoes, ticks, and sand flies are at high risk during day or night, in both urban and rural areas.

Sexually Transmitted and Blood-borne Diseases

Hepatitis B and HIV/AIDS are reported in Oman, particularly in prostitutes, a high-risk group for sexually transmitted disease worldwide. Men having sex with men, heterosexual contact, and intravenous drug use are the predominant modes of transmission. The long-term health impact of these diseases on individuals is substantial. A variety of other sexually transmitted diseases (e.g., chlamydia, gonorrhea, chancroid, herpes, syphilis, and venereal warts) may cause symptomatic infection in a high percentage of personnel who have sexual contact.

Water-contact Diseases

Operations or activities that involve extensive freshwater contact (e.g., in lakes, rivers, streams, or other surface water) may result in personnel being temporarily debilitated with leptospirosis and schistosomiasis in some locations. Arid portions of the country without permanent or persistent bodies of surface water do not support leptospirosis or schistosomiasis transmission. In addition, bodies of surface water are likely to be contaminated with human and animal waste. Activities such as wading or swimming may result in exposures to enteric diseases such as diarrhea and hepatitis via incidental ingestion of water. Prolonged water contact also may lead to the development of a variety of potentially debilitating skin conditions such as bacterial or fungal dermatitis.

Respiratory Diseases

U.S. personnel may be exposed to a wide variety of respiratory infections common in the local population. These include influenza, pertussis, viral upper respiratory infections, viral and bacterial pneumonia, and others. U.S. military populations living in close-quarter conditions are at risk for substantial person-to-person spread of respiratory pathogens. Influenza is of particular concern because of its ability to debilitate large numbers of unvaccinated personnel for several days.

Animal-associated Diseases

Rabies risk occurs in Oman. Foxes are the primary reservoir, with spillover into dogs and other domestic animals. Personnel bitten by potentially infected reservoir species may develop rabies in the absence of appropriate prophylaxis. The circumstances of the bite should be considered in evaluating individual risk; bats or wild carnivores should be regarded as rabid unless proven otherwise.

Rare cases of Q fever could occur among personnel exposed to aerosols from infected animals. More cases are possible in situations where personnel have heavy exposure to barnyards or other areas where animals are housed.

Medical Capabilities

Oman has one of the better health care systems in the Middle East. The Ministry of Health (MOH) provides most patient care, but a private health care sector is growing. The best overall care is found in the capital, Muscat.

The quality of care provided by physicians is good by Western standards. The vast majority of Oman's physicians are expatriates, trained in their home countries. Nurses provide care that is fair by regional standards but falls below Western standards.

The MOH's three-tiered system of primary, secondary, and tertiary health care offers most specialties and subspecialties. Most cities and towns have at least one modern hospital; the best health care facilities are in Muscat. The MOH operates 49 of the 58 hospitals located throughout the country; the other hospitals are operated by the private sector or the armed forces. Al Khoula Hospital and Royal Hospital are the best MOH-run facilities; both are located in Muscat. The Armed Forces Military Hospital in Muscat is the best military facility.

Oman's central blood bank, located in Bausher, southwest of Muscat, is operated by the MOH. At least 11 other hospital-based blood banks are located throughout the Sultanate. Blood reportedly is tested for hepatitis B, hepatitis C, HIV, and syphilis; however, the blood supply does not meet Western standards. Blood products from major medical facilities probably are suitable for use in medical emergencies.

Oman has a rapidly growing pharmaceutical market. The MOH procures and distributes medical materiel for public hospitals, although shortages of medicines are reported to occur frequently.

Oman has no national emergency ambulance service. Most people rely on family, friends, or taxis for transport to the hospital. Some hospitals maintain a few vehicles to transport patients between hospitals. The police and military are capable of conducting helicopter evacuation missions.

Oman's official language is Arabic, but English is widely spoken by health care professionals.

AL Khoula Hospital

Location	Mina Al Fahal Road in Ruwi Heights, Muscat 23-36-46N 058-31-01E
Telephone	968-563-625
Type	470-bed government hospital
Capabilities	Medical – general, emergency, orthopedics. Surgical – general surgery, neurosurgery, plastic surgery, reconstructive surgery. Ancillary – blood bank, burn intensive care unit (ICU), laboratory, X-ray.
Comments	Designated national trauma center and main center for head injury. U.S. Embassy health unit lists the hospital for accident and emergency services. Identified for mass casualty scenarios.

Royal Hospital

Location	Al Ghubrah Street, Muscat 23-34-30N 058-23-17E
Telephone	968-592-888

Type	635-bed government hospital
Capabilities	Medical – general, emergency, cardiology, pediatrics. Surgical – general surgery, obstetrics/gynecology, orthopedic surgery, urology. Ancillary – blood bank, state-of-the-art cancer unit, dialysis unit, computerized tomography (CT) scanner, laboratory, X-ray.
Comments	U.S. Embassy health unit lists this hospital for accident and emergency department services. Identified for mass casualty scenarios. Modern, well-equipped facility with Western-trained consultants.

Armed Forces Military Hospital

Location	Nizwa Road, Muscat 23-34-25N 058-12-25E
Type	150-bed military hospital
Capabilities	Medical – general, dental. Surgical – general surgery, obstetrics/gynecology. Ancillary – blood bank, trauma unit, laboratory, magnetic resonance imaging (MRI), ultrasound, X-ray.
Comments	Can handle major traumas. Open-bay rooms holding 6 patients each. Normally treats only members of Oman military and their families. U.S. Embassy personnel use this facility for serious cases exceeding sick call requirements. Helipad. Located 19 kilometers west of Seeb Int. Airport.

HISTORY

Oman is at a crossroads between Asia and Africa, and between Northern Arabia and Southern Arabia. The two dominant ethnic

groups of Oman reflect this crossroads character, the Qahtan are from Southern Arabia, and the Nizar are from Northern Arabia. Oman was one of the first regions to convert to Islam, and Omanis played a significant role in bringing Islam to Iraq. After the death of the Prophet, Islam split into several branches as a result of political and religious differences. The Omanis follow the Ibadi doctrine, which holds that the Caliphate (leadership of the Islamic world) is not hereditary. Ibadi doctrine was suited to the loose confederation of tribes living in Oman, so it firmly established itself early in Oman. Its success is demonstrated in the active tradition of a separate Omani Imam, first established in the 8th century.

In 752 the Sunni Caliphs in Baghdad conquered Oman and killed the Omani Imam. A new Imam rose in the interior, giving Oman a dual nature, with an Imam ruling the interior and a foreign or secular rule controlling the coast. In the late 10th century, the Iranians conquered the Oman coast. Replacing the Iranians were the Zangid rulers of Southern Iraq who arrived in Oman in the 13th century, but the Zangid were forced out after only a generation. Omani sailors and traders established cities in East Africa and traded as far east as China. Muscat became one of the leading trade cities of the region. From bases in East Africa, Oman became wealthy on the slave trade between Africa and Arabia. Muscat, also, prospered from trade with India. In the 16th century the Iranians, in the form of the Safavids, once again asserted control over Oman's coast.

The Portuguese arrived in Oman in 1507 and quickly established themselves in Sohar and Muscat, displacing the Iranians. Portuguese explorers arriving in the region quickly realigned trade routes from the Red Sea to the Horn of Africa. Oman, however, remained a key trading post between East Africa and India. The search for trade routes to the East had also brought British and Dutch traders to the region. The Iranians, eager to reassert their control of Oman, of-

fered the English and Dutch half the income from the Gulf ports to drive the Portuguese out. The conflict between the Portuguese, English, and Dutch created a power vacuum in the region, which the Omanis exploited to regain independence. Since that time, the British have maintained a close relationship with Oman.

Imam Nasir ibn Murshid expelled the Portuguese from Oman in 1650. Shortly after Murshid's death, dynastic quarreling brought the Iranians back into Oman. Imam Ahmad ibn Said expelled the Iranians in 1749. His family (al bu Said) has ruled Oman since. Following the expulsion of the Iranians, Ahmad reasserted Oman's control over its former possessions in East Africa, including Mombassa, Mogadishu, and Zanzibar. Ahmad encouraged Omanis to relocate to East Africa, and Ahmad himself moved to Zanzibar. During this time, Oman remained competitive in Indian Ocean trade.

In 1856, following the death of Sultan Said bin Sultan, the United Kingdom negotiated the division of Oman's African interests and Oman proper between bin Sultan's sons. The loss of African trade to Oman caused its economy to go into a decline. The United Kingdom exacerbated this economic slump by curtailing the slave trade. Despite this, U.K.-Oman ties remain strong.

Ongoing animosity between the port cities and the interior have frequently erupted into civil war. In the 19th century, the Dhofar region reasserted its independence by electing a separate Imam. This led to increasing friction between the coast and the interior. Sultan Faisal bin Turki died in 1913. At the same time Dhofar elected a new Imam, Salim ibn Rashid al Harthi. Salim refused to recognize Faisal's son, Taimur ibn Faisal. Fighting between Imam Salim and Sultan Taimur erupted and continued until 1920. In 1920, the sultan and the imam signed the Treaty of Seeb, which gave control of the coast to the Sultan and the interior to the imam.

In 1954, Taimur's son Said bin Taimur (father of the current sultan) began to assert control over the interior to further British oil exploration in the interior. British exploration coincided with the death of the incumbent imam. The Imam's successor, Ghalib bin Ali, led a resistance movement against the sultan for an independent Dhofar. The United Kingdom intervened on behalf of the sultan and ended the official power of the Imam. Shortly afterward, the sultan and imam reached agreement on control over the Dhofar region of Oman and turned to the Saudi incursions into Oman. In 1952, the sultan's forces managed to eject the Saudis from Buraimi Oasis. Sultan Said, believing that the imam had reneged on his deal and backed the Saudis in the border dispute, occupied the interior town of Ibri. This cut the imam off from the disputed area. The imam appealed to the Arab league to recognize the interior as a separate state. In response, the sultan occupied the imam's capital cities of Niwa and Rustaq, thereby ending the imam's bid for independence.

As a matter of policy Said kept Oman isolated from the outside world. In 1958 he isolated himself in his palace. He opposed education and road building because he believed Western influence would undermine his rule. At the same time he hoarded the oil revenues from Oman's newly profitable oil fields. In 1962 a number of Dhofar radicals formed the Dhofar Liberation Front (DLF). Three years later, the DLF began fighting what is known as the Dhofar Rebellion. As the rebellion progressed and South Yemen gained more influence over the DLF, the DLF moved from pan-Arabism to a Marxist ideology. Even this revolt against his authority did not shake Said from his isolationist policies. Because of Said's inability to deal with the revolt, his son Qaboos deposed him in a bloodless coup in 1970.

After taking the throne, the Sandhurst-trained Qaboos worked to deal with the revolt that had plagued his father. The DLF had be-

come the Popular Front for the Liberation of the Occupied Arabian Gulf (aided by China through communist South Yemen) and the National Democratic Front for the Liberation of the Occupied Arabian Gulf. These two revolutionary movements merged in 1972, forming the Popular Front for the Liberation of Oman and the Arabian Gulf (later renamed the People's Front for the Liberation of Oman). In 1973 Sultan Qaboos requested that Iran send troops to combat the insurrection. Supported by U.K. advisers and Iranian troops, the sultan claimed victory in 1975. Because of Yemeni support for the Dhofar Rebellion, Oman closed its borders with Yemen in 1979. With the mediation of their regional neighbors, relations were restored between Oman and Yemen in 1982, finally ending the Dhofar Rebellion.

To strengthen ties with the United States after the Soviet invasion of Afghanistan in 1980, Oman began negotiating a defense treaty with the United States. In return for the use of Masirah Island in times of crisis, the United States committed itself to Oman's security and military and economic aid. One year later the United States opened a communications center in Oman. At the same time, Oman and five other Gulf Arab states formed the Gulf Cooperative Council in 1981.

After the 1990 invasion of Kuwait by Iraq, Oman proposed mediation. When mediation failed, Oman supported coalition efforts to expel Iraq from Kuwait and provided ground and naval forces to the coalition against Iraq.

Oman and Yemen agreed to demarcation of the border. In 1992 Sultan Qaboos pledged US$21 million to build a border highway. The two countries normalized relations in 1994. The border demarcation between Oman and Yemen was completed in 1997, end-

ing border clashes between the two countries. Oman is the most stable of the Gulf Cooperation Council (GCC) countries.

GOVERNMENT AND POLITICS

Government

The Sultanate of Oman is a traditionalist Arab monarchy with no written constitution or political parties; there are no elections. The chief executive is the sultan, who is both head of state and prime minister. Additionally, he holds the twin portfolios of defense and finance. Sultan Qaboos bin Said, has been in power since July 1970.

National Level

The country's administration is run by the cabinet, with assistance from the cabinet Secretariat, Specialized Councils, the Governorate of the capital, and the *Majlis al Shura* (State Consultative Council – SCC). The highest administrative authority is the cabinet, which derives its power directly from the sultan, to whom it is collectively responsible.

There is no formal constitution. The sultan legislates by decree, assisted by the cabinet. In a move intended to provide Omanis with greater participation in government, Sultan Qaboos named a new SCC in November 1991. The SCC consists of a president and 80 representatives, who are elected. They are chosen in an indirect process, in which rural constituencies elect two candidates and urban areas elect four. Out of 160 such successful candidates, the sultan selects 80 to sit in the Assembly, which has no powers to enact legislation but can draft new laws, or suggest amendments to existing legislation. In August 1997, all seats to the SCC were opened to women by a royal decree. The establishment of the SCC seems to be a first cautious step toward democracy. While it is

only a consultative body at present, it appears likely to evolve into some form of legislative body in future.

Note. A new basic law to be implemented in the future provides another legislative body, in addition to expanding the SCC to 110 members. The resulting bicameral legislature will be known as the Omani Council

Local Level

Local government in Oman is divided into eight governorates. The governorates are sub-divided into 59 *wilayats*, each under a governor (*wali*), who is appointed by the sultan. The governors usually rule with the assistance of local tribal authorities. The major duties of the wali are maintaining internal security and collecting taxes. Municipal councils are being set up for local governance.

Judicial Branch

Oman's legal system is based on English common law and Islamic law, which is exercised by the Shari'a courts. *Qadhis* (judges), who are officers appointed by the Minister of Justice, preside over local courts. Appeals from all courts must go to the Court of Appeals in Muscat. In addition to Islamic law, tribal customary law is administered to settle disputes, particularly in more remote areas of the country. There is the ultimate right to appeal to the sultan. Oman has not accepted compulsory International Court of Justice jurisdiction.

Principal Government Officials

- **Qaboos bin Said al-Said** –
  Sultan, Prime Minister, and Defense, Finance and Foreign Affairs Minister, Chairman of the Central Bank
- **Qais bin Abd al-Munim al-Zawawi** –
  Deputy Prime Minister for Financial and Economic Affairs

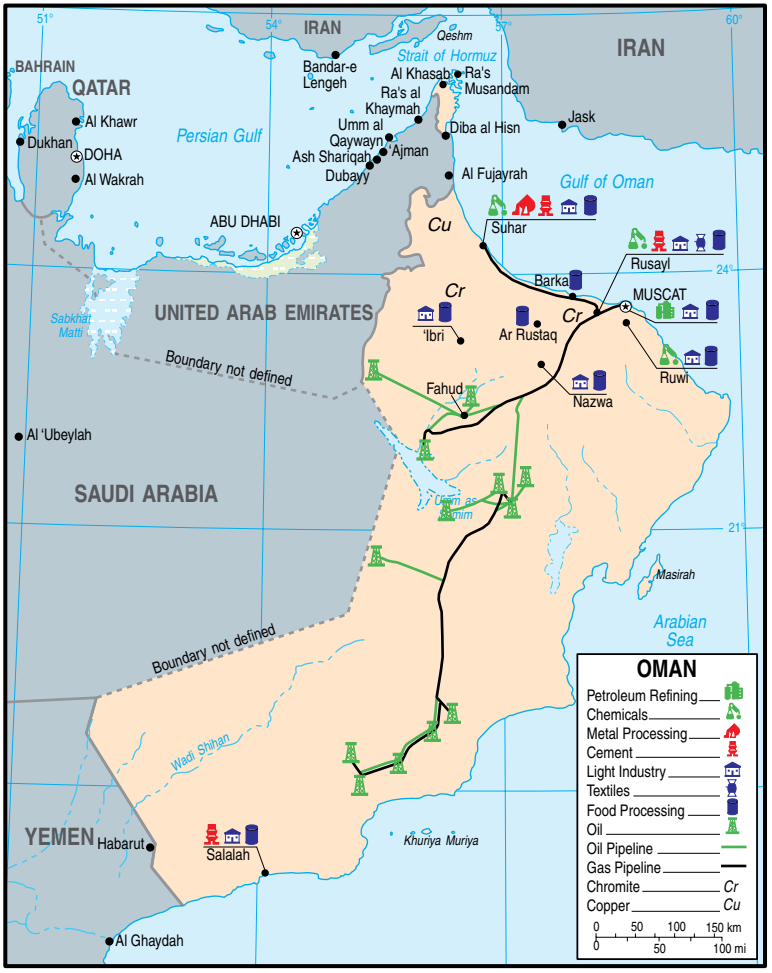
- **Fhad bin Mahmud al-Said** –
  D*eputy Minister for Legal Affairs*
- **Fahar bin Taymur al-Said** –
  Deputy Prime Minister for Security and Defense
- **Thuwayni bin Shihab al-Said** –
  Special Representative of the Sultan
- **Yusuf bin Alawi ibn Abdallah** –
  Minister of State for Foreign Affairs
- **Hamud bin Abdallah al-Harthi** –
  Minister of Justice and Awqaf and Islamic Affairs

ECONOMY

As with most Gulf countries, Oman's economy is dominated by the oil industry, which provides 70 to 80 percent of government revenues and accounts for 38.3 percent of GDP (2007 est.). Since 1970, when Sultan Qaboos came to power, oil revenues have been used to dramatically change Oman's way of life. Development activities increased rapidly. Agricultural projects improved water supplies and crop varieties for farmers. Up-to-date shipping facilities at Matrah and an international airport at Seeb have improved transportation links with the rest of the world, while paved roads and airfields eased travel within the country. Electrical

Petroleum Refinery

generating plants, housing projects, and radio stations increased the quality of life, while modern hospitals and public health programs extended the average lifespan. For example, the country's



infrastructure has expanded from about 10 kilometers (6 miles) of paved road in 1970 to more than 9,673 kilometers (6,011 miles) of paved roads by 2001. The number of schools in Oman has increased from 10 in 1970 to more than 500 today.

Oil in commercial quantities was discovered in 1964, and production began in 1967. Oman's total proven reserve has been estimated to be 4.85 billion barrels. Since the first refinery became operational in 1982, Oman has been self-sufficient in most oil-derived products.

Oman recognizes the need to diversify the economy to allow for continued economic growth after its oil reserve is exhausted. Primary diversification is based on agriculture, fishing, mining, and light industry. Unlike the economies of smaller oil-rich nations of the Arab Gulf, Oman's economy has for centuries had a strong agricultural base, which continues to develop. About 70 percent of Omanis depend on agriculture for their livelihood. The government subsidizes seed, fertilizer, equipment, and technical know-how as the industry

Palm Tree Farm

modernizes. The fishing industry is also modernizing, with investment in refrigeration plants, boats, and equipment. Oman's mineral resources—a significant source of revenue—include copper, manganese, lead, iron, zinc, chrome, asbestos, phosphates, coal, gold, silver, and nickel. Many of these resources are found in remote areas of the country, thereby reducing their economic viability. Light industry is being expanded. An industrial zone has been established at Rusayl (72 kilometers/45 miles from Muscat); other sites are planned in Salalah, Sur, Nizwa, and Sohar. Gas reserves, currently being exploited, are estimated at about 795.2 billion cubic meters.

Fish Market

Oman is also pursuing a program to employ Omani workers instead of hiring foreign guest workers. The government hopes to place a large number of Omanis into the workforce currently occupied by expatriates.

Even with oil revenues, agricultural and livestock production remain vital parts of the economy. The government no longer depends on taxing produce and livestock to meet its budget as it did before the arrival of oil revenue.

Immigrant Workers

In Oman's generally stable conditions, private businesses have also rapidly expanded in retail trade, services, and other areas. In 1989, its stock exchange opened with 71 companies, mostly in services such as insurance and transportation. The pace of economic development continues to attract foreign investors.

With its reputation for competent economic management, Oman has been viewed as an economically stable country. The government has provided incentives for private and foreign investment. If Oman maintains its carefully planned infrastructure development and investment program, it is expected to have a sound economic base by the time its oil reserves are exhausted. In January 1996, the Oman government introduced a new 5-year plan designed to reduce dependency on hydrocarbon deposits.

In keeping with the growing international importance of Oman's economy, many of the world's premier banks have established branches in Oman. These include Citibank, American Express,

British Bank of the Middle East (part of the Hong Kong and Shanghai Banking Corporation), and Standard Chartered Bank. However, the largest banking network in Oman is the Oman

Agriculture

International Bank. The country also has well developed postal and telecommunications systems including mobile telephone service, digital telephone lines, and access to the Internet. All the major courier companies such as Federal Express, DHL, and UPS offer regular service to and from Oman.

Oman is looking south in its foreign trade relations. It is a member of the Indian Ocean Rim Association. And, it entered into major joint ventures with India in 1997. Oman aspires to become the commercial linchpin between the GCC and Asia.

During 1998, the price of Oman's oil collapsed. This had a profound effect on Oman's economy. In February 1999 the government announced that it expected its budget deficit to double. The potential for unrest in Oman as a result of economic hardship cannot be ruled out despite the governments' best efforts to prevent it. The rise in oil prices in mid-1999 slowed the increase of the deficit and may have kept the economy stable.

Statistics

Gross Domestic Product (GDP) (2007 estimates)	
Purchasing Power Parity	US$61.61 billion
Official Exchange Rate	US$40.06 billion
Per Capita (PPP)	US$24,000
Public Debt	3.8% of GDP (2007 est.)
Debt, External	US$5.297 billion (2007 est.)
Budget	**(2007 est.)**
Revenues	US$13.99 billion
Expenditures	US$13.68 billion

Exports	US$22.89 billion f.o.b. (2007 est.)
Partners (2006)	China 23.2%, South Korea 19.2%, Japan 12.2%, Thailand 8.9%, South Africa 8.3%, UAE 6.5%, Taiwan 4.2%
Commodities	Petroleum, reexports, fish, metals, textiles
Imports	US$11 billion f.o.b. (2007 est.)
Partners (2006)	UAE 19.7%, Japan 18%, U.S. 7.5%, Germany 5.3%, India 4.2%
Commodities	Machinery and transport equipment, manufactured goods, food, livestock, lubricant
Key industries	Petroleum production and refining, liquefied natural gas production, construction, cement, copper, steel, chemicals, optic fiber
Agriculture	Dates, limes, bananas, alfalfa, vegetables, camels, cattle; fish

ARMED FORCES

The small but effective Sultan's Armed Forces (SAF) have a reputation as being one of the most impressive militaries in the Gulf region. Their success in countering internal security problems of the past 25 years has added to that credibility.

The SAF consist of an army, air force, and navy. The total active strength of the SAF is approximately 39,800, comprising 31,500 army, 4,100 air force, and 4,200 navy personnel. This figure includes nearly 3,700 foreign troops in the SAF and the Royal Household Troops. Foreign personnel have traditionally held senior positions in the SAF; however, with improved training and

military experience, native Omanis are increasingly acquiring these positions under a policy to lessen the foreign population in its military. Population pressures will probably force continued reliance on non-Omanis in the junior ranks. The Royal Household Troops are maintained to defend the sultan and his family.

Oman's military expenditures equaled about US$3.26 billion in 2007, or 8.3 percent of GDP (market exchange rate).

Key Military Officials

Army Commander –
Major General Ali bin Rashid bin Mohammad al Kilbani

Air Force Commander –
Vice Air Marshal Mohammad bin Mahfoodh bin Saad al Ardhi

Navy Commander –
Rear Admiral Sayyid Shihab bin Tarik bin Taimur al Said

Army

The Royal Army of Oman is responsible for ground combat operations as well as the protection of the Sultan of Oman.

Ground defense of Oman is complicated by the separation of the nation into two non-congruent territories. The defense strategy in the northern territory (Musandam Peninsula) emphasizes protection of the Strait of Hormuz, while the southern territory command is tasked primarily with counterinsurgency operations against anti-government rebels that have attempted to infiltrate Oman from Yemen.

Oman is divided into three military zones of administration—the Army's main command, located at Muaskar al-Murtafa and

two subordinate headquarters, located at Muaskar al-Murtafa and Salalah. An independent rifle company is located on the Musandam Peninsula.

The Army numbers approximately 31,500 active duty personnel. The Army reserve numbers 1,000. Professional soldiers, including Pakistani contract personnel, account for a relatively large percentage of the Oman Armed Forces. In addition, the sultan maintains a private Royal Guard Brigade with 4,500 personnel. The Royal Guard of Oman includes two 400-strong Special Forces regiments, and the Royal Yacht (operated by 150 Navy personnel and based in Muscat) and VIP aircraft of the Royal Flight (operated by 250 Air Force personnel). The Royal Army of Oman uses the British system, with regiments being equivalent to U.S. battalions.

Equipment

Armor

Tanks

Nomenclature	Type	Quantity
T-80*	MBT	9
Challenger II	MBT	38
M60A1	MBT	6
M60A3	MBT	73

*Oman's T-80 MBTs have been used for training and evaluation.

APCs, IFVs

Nomenclature	Type	Quantity
Fahd (Royal Guard)	APC	31
Piranha	APC	175
Scorpion	APC	37

Nomenclature	Type	Quantity
Spartan	APC	6
ZSL-92 (WZ 551)	APC	50
Stormer	Command	4
Sultan	Command	13
VBL, Panhard	Armored Scout Car	132
VAB PC (Royal Guard)	Command	2
VAB VCI (Royal Guard)	IFV	14
VAB VCI (Royal Guard)	IFV	2
VBC 90 (Royal Guard)	Gun system	6

Combat Support Vehicles

Nomenclature	Type	Quantity
Challenger ARV	ARV	4
Challenger	Driver training	2
Sampson	ARV	3
M88-A1	ARV	2

Artillery

Guns

Nomenclature	Type	Quantity
130-mm M-46	Towed	12
130-mm Type 59-1M	Towed	24
105-mm L118	Towed	42

Howitzers

Nomenclature	Type	Quantity
155-mm G6	Self-propelled	25
155-mm FH70	Towed	12

Nomenclature	Type	Quantity
130-mm Type 59-1	Towed	NA
122-mm D-30	Towed	30

Mortars

Nomenclature	Quantity
120-mm Brandt	12
4.2-in M-30	12
81-mm L16	80

Antitank weapons

Nomenclature	Type	Quantity
BGM-71 TOW	AT	18
Milan	AT	50
LAW 90	AT	50
RPG-7	AT	100

Air Defense

Nomenclature	Type	Quantity
40-mm L60	Towed ADA	12
23-mm ZU-23-2	Towed ADA	4
20-mm French VAB VDAA	SPAA System	9
35-mm GDF-005 with Skyguard	Towed ADA	10
Blowpipe	SAM	NA
Javelin	SAM	12
SA-7 GRAIL	SAM	34

Air Force

The Royal Air Force of Oman (RAFO) has its headquarters at Muaskar al Murtafa. It is commanded by Vice Air Marshal

YAHYA bin Rasheed bin Ali al-Juma, who took command of the RAFO in Feb 2003. Oman's need for air transport is emphasized by its separated geographic territories—the Musandam peninsula is separated from Oman proper by a section of the United Arab Emirates. The RAFO also provides air support for Oman's army and navy. The RAFO numbers 4,100 active duty personnel and consists of the following units:

Unit	Base	Type	Role
1 Squadron	Al Masirah	PC-9	Training
		Super Mushshak	Training
		SF-25C Falke	Training
2 Squadron	Muscat-Seeb	SC7-3M-4022 Skyvan/Seavan	Transport/maritime surveillance
3 Squadron	Salalah	AB 205A	Transport
		Super Lynx	Transport
		Bell 206B	Training
4 Squadron	Muscat-Seeb	BAe 1-11	Transport
6 Squadron	Al Masirah	Hawk Mk 203	Training and light attack
		Hawk Mk 103	Training
8 Squadron	Thumrait	Jaguar	Air Defense and attack
14 Squadron	Al Musana'a	AB 205A	Transport and SAR
		Bell 206B	Training
		HH-1H	Transport and SAR
		Super Puma	Transport
		Puma	Transport
15 Squadron	Al Musana'a	Super Lynx	Utility and SAR
16 Squadron	Muscat-Seeb	Hercules	Transport
18 Squadron	Thumrait	F-16	Multirole fighter
20 Squadron	Thumrait	Jaguar	Air defense and attack
Det	Al Masirah	AB 205A	SAR
		Super Lynx	SAR
Det	Khasab	Bell 205A	SAR

In a contingency, the RAFO would be reinforced by the Royal Oman Police Force aviation wing.

Equipment

Aircraft

Nomenclature	Role	Quantity
F-16C Fighting Falcon	Multirole fighter	8
F-16D Fighting Falcon	Multirole fighter	4
Jaguar International OS	Air defense, attack	14
Jaguar GR. Mk 1	Air defense, attack	2
Hawk Mk 203	Light attack, recon.	11
C-130H Hercules	Transport	3
SC7-3M-4022 (Skyvan and Seavan)	Transport, maritime surveillance	10
One-Eleven Srs 485GD	Transport	3
Hawk Mk 103	Armed trainer	4
Super Mushshak	Trainer	7
PC-9M	Trainer	12
SF-25C Falke	Trainer	2
Jaguar International OB	Trainer	3
Jaguar T. Mk 2	Trainer	1

NOTE: Quantities above include maritime surveillance aircraft, which are operated by the RAFO.

Helicopters

Nomenclature	Role	Quantity
SA 330J Puma	Communications	2
AS 332C Super Puma	Communications	2
AB-412 HP/SP	Transport	6

Nomenclature	Role	Quantity
HH-1H Iroquois	Utility	1
205A	Utility	3
205A	Utility	7
WG.13 Super Lynx Mk 120	Utility	15
NH90	Utility	20*
206B JetRanger	Trainer	4

*NH90 helicopters – 20 are on order.

NOTE: quantities above include naval helicopters, which are operated by the RAFO.

Missiles

Nomenclature	Role
AIM-9M Sidewinder	Air-to-air
AIM-120C AMRAAM	Air-to-air
AGM-65D Maverick	Air-to-surface
AGM-65G Maverick	Air-to-surface
AGM-84D Harpoon	Antiship attack

Mission and Doctrine

The RAFO has the traditional air force mission of defending national airspace. It also provides close air support, battlefield resupply to the army, maritime patrol, and search and rescue.

The RAFO's doctrine is based on experience gained from the communist uprising in the Dhofar region and on the advice of U.K. specialists. The original RAFO (the Sultan of Oman's Air Force) was formed with U.K personnel, so much of its doctrine reflects U.K. influence.

The primary combat aircraft are the Jaguar, with air defense and attack roles, and the F-16, with an air superiority role. Hawk Mk 203 aircraft fill light attack and reconnaissance roles.

Deployment

The Air Force operates from bases in both the northern and southern territories, and from several remote desert landing strips. Principal bases are located at Muscat-Seeb, Al Masirah, Al Musana, Salalah, and Thumrait. Secondary airstrips are at Goat Island and Khassab.

Aircraft Acquisition and Modernization

Before 2005, the RAFO's fighter aircraft consisted of the Jaguar and the light attack capabilities of the Hawk MK 203. In August 2002, the U.S. approved the sale of 12 F-16C/D Block 50 aircraft to Oman. Oman accepted delivery of all 12 between 2005 and 2006.

Before Oman bought the F-16 aircraft from the United States, it upgraded its Jaguar fleet. With this upgrade, the Jaguar fleet is estimated to remain operational until at least 2010.

Oman also plans to expand its airborne reconnaissance capability by acquiring a BAE systems F-9120 Advanced Airborne Reconnaissance System (AARS) package through the U.S. Foreign Military Sales program. This package includes two AARS systems, one ground exploitation station, and logistics support. The RAFO also plans to integrate the AARS with their F-16 aircraft.

In 2006, the RAFO received the last of 16 Agusta Westland Super Linx Series 300 shipborne multirole helicopters. Although these helicopters are assigned to and operated by the RAFO, they are primarily used by the Royal Oman Navy.

In July 2004, the RAFO signed a contract for 20 NH90 multi-role helicopters to serve as its medium-lift transport helicopter. Deliveries are to begin in 2008.

Training

Pilot training is conducted at the Sultan Qaboos Flying Academy at Masirah. Initial training starts on Scheibe Falke motorgliders. It then continues in the Super Mushshak and PC-9M, and finishes in the Hawk 103 and Hawk 203. Further, advanced instruction is performed in the two-seat version of the respective airframe.

Gulf Cooperation Council

In December 2000, the member nations of the GCC (Saudi Arabia, Kuwait, UAE, Oman, Bahrain, and Qatar) signed a joint defense pact, which commits GCC members to "defend any member state victim of an external threat or danger." In an attempt to protect member nations' airspace, Oman, along with other GCC members, participated in the establishment of a joint C4I defense system in 2001. This network, called *Hizam al-Taawun* (Belt of Cooperation – HAT), enables all member nations to monitor aircraft in their own and surrounding airspace and also helps them to coordinate defensive efforts.

Navy

The Royal Navy of Oman operates in the Gulf of Oman, Strait of Hormuz, Arabian Sea, and Persian Gulf. Oman has accelerated its acquisition of antisubmarine warfare (ASW) vessels and systems in response to Iran's acquisition of three KILO-Class submarines from Russia. The Navy's primary missions are to protect and defend the Sultanate's nearly 1,610 kilometers (1,000 miles) of coastline and offshore economic zones, and to assist in search and rescue (SAR) operations. The Oman Air Force operates the maritime patrol and

SAR aircraft. The Navy has 4,200 active duty personnel, including civilians and the maritime division of the Royal Oman Police Force.

Deployment

The RNO headquarters is in Muscat; additional naval bases are at Ghanam Island, Muscat, Seeb, Wudam, Ras Musandam, Minah Rasyut, Sur, and Wudam Alwi.

Equipment

Ships

Class	Role	Quantity
QAHIR AL AMWAJ (VIGILANCE)	FFL	2
PROVINCE I (DHOFAR)	PTG	4
SEEB (VOSPER 25-M)	PB	4
AL BUSHRA	PC	3
SABA AL BAHR (VOSPER 30-M)	LCU	3
FULK AL SALMAH	WAG	1
BROOKE MARINE 84-M (AL MUNASSIR)	LST	1
BROOKE MARINE 93-M (NASR AL BAHR)	LST	1
LEWIS OFFSHORE 25-M (AL NEEMRAN)	LCU	1
AL MABRUKAH	AXT	1
AL SUTANA	AK	1
AL RAHMANYAI	YGS	1
SHABAB OMAN	YTS	1

Naval Aviation

The RAFO operates aircraft in support of the RNO.

Plans and Programs

Ship Acquisition and Modernization

Oman has a number of naval procurement programs underway as it seeks to increase its maritime security. Project Khareef involved the purchase of three offshore patrol vessels from Vosper Thornycroft, the first of which will be delivered in 2010. These warships will possess an embarked helicopter capability. Additionally, Oman acquired a 64-meter landing craft from Abu Dhabi Shipbuilding in 2006 that can perform amphibious support operations and troop transportation.

Paramilitary Forces

The Royal Oman Police Force is responsible for internal security and coastal surveillance. It is organized into a Tribal Home Guard (*Firqat*), numbering 4,000 personnel, an air wing, and a Coast Guard, numbering 400 personnel.

During wartime, The Tribal Home Guard is placed under the command of the military and becomes responsible for rear-area defense. The Police Air Wing, at Muscat-Seeb, operates several fixed-wing and rotary aircraft including the following:

Aircraft

Type	Role	Quantity
Do228	Transport	1
CN235M	Transport	2
BN-2T	Transport	1
Bell 205A	Helicopter	3

Type	Role	Quantity
Bell 214ST	Helicopter	6
AW 139	Helicopter	10*

*AW 139 – four on hand, 6 on order

Coast Guard

From Mina al Qaboos and Sidab, the Coast Guard operates the following vessels:

Ships

Class	Role	Quantity
VOSPER 75-FT (HARAS 1)	WPB	5
KARLSKRONA 29-M (CG29 Type/HARAS 7)	WPB	3
KARLSKRONA 27-M (CG27 Type/HARAS 6)	WPB	1
P 1200	PATROL	2
WATERCRAFT P2000 (DHEEB AL BAHAR I)	PATROL	1
LECOMTE P1903 (HARAS 8)	WPB	1
WATERCRAFT 13-M MK II (ZAHRA 14)	WPB	5
ZAHRA 16	PATROL	3
ZAHRA 4	PATROL	4
YOKOHAMA 23-M (Type D 59116)	WPB	2

APPENDIX A:
EQUIPMENT RECOGNITION

INFANTRY WEAPONS

9-mm Pistol Browning High Power FN 35

Caliber	9.0 x 19.0 mm (Parabellum)
Effective Range	50 m
Operation	Recoil, semiautomatic
Feed Device	13-round box magazine
Weight Loaded	1.06 kg
Overall Length	204 mm

5.56-mm Assault Rifle/Carbine Steyr AUG

Type	Multipurpose assault rifle
Caliber	5.56- x 45-mm
Cyclic Rate of Fire	650 rounds/minute
Operation	Gas, selective fire
Feed Device	Detachable polymer box magazine
Weight (Loaded)	0.49 to 0.66 kg, depending on variant
Overall Length	626 to 915 mm, depending on variant

VARIANTS: short assault rifle, carbine, standard assault rifle, heavy-barrel rifle

5.56-mm Assault Rifle M16A1

Cartridge	5.56 x 45 mm
Effective Range	800 m
Maximum Range	3,600 m
Cyclic Rate of Fire	700 rounds/minute
Operation	Gas, direct action, selective fire
Feed Device	20- or 30-round box magazine
Weight Unloaded	3.40 kg
Length	990 mm

5.56-mm Assault Rifle SG540

Cartridge	5.56 x 45.0 mm
Effective Range	300 m
Cyclic Rate of Fire	650 to 800 rounds/minute
Operation	Gas, selective fire with 3-round burst
Feed Device	20- or 30-round detachable box magazine
Weight Unloaded	3.5 kg
Length	950 mm with fixed stock; 720 mm with folded stock

7.62-mm Rifle Model FN FAL

Caliber	7.62 x 51 mm
Effective Range	600 m
Maximum Range	3,700 m
Cyclic Rate of Fire	650 rounds/minute
Operation	Gas, selective fire
Feed Device	20-round box magazine
Weight Unloaded	4.3 kg
Length Overall	1,100 mm

9-mm Submachinegun Sterling

Cartridge	9- x 19-mm Parabellum
Semiautomatic Fire	185 m
Automatic Fire	Approximately 90 m
Cyclic Rate of Fire	550 rounds/minute
Operation	Blowback, selective fire
Feed Device	34-round box magazine
Weight Unloaded	2.7 kg
Length	711.0 mm

Using the Sterling Submachinegun: (1) Pull the operating handle to the rear [the bolt will remain to the rear as the weapon fires from an open-bolt]. (2) Engage the safety by moving the change lever [located on the left side of the pistol grip] to the letter **S**. (3) Insert a loaded 34-round magazine into the magazine well on the left-side of the receiver, ensuring that it locks in place. (4) Move Safety to letter **R** for **SEMI** or **A** for **AUTO**. STERLING IS READY TO FIRE.

7.62-mm General Purpose Machinegun FN MAG

Cartridge	7.62 x 51 mm NATO
Effective Range	1,500 m
Cyclic Rate of Fire	650 to 1,000 rounds/minute
Operation	Gas, automatic
Feed Device	Disintegrating metal link belt
Weight Loaded	13.92 kg (with butt stock and bipod)
Overall Length	1,260 mm

0.50-in Heavy Machinegun Browning M2HB

Cartridge	0.50-in Browning (12.7 x 99 mm)
Maximum Range	6,765 m
Effective Range	Over 1,500 m
Cyclic Rate of Fire	450 to 600 rounds/minute
Operation	Short recoil, selective fire
Feed Device	100-round disintegrating-link belt
Weight Loaded	38 kg
Overall Length	1.656 m

0.50-in (12.7-mm) Antimateriel Rifle Barrett Model 82A1

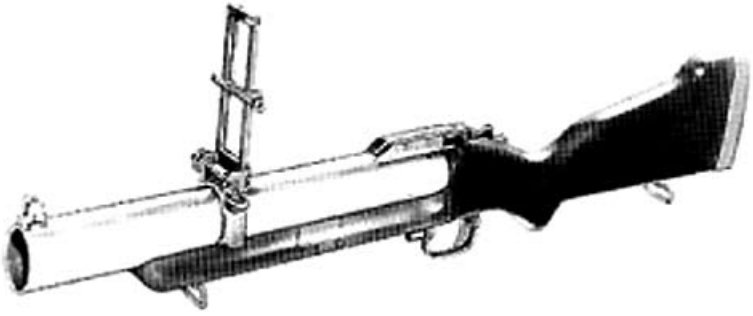
Caliber	12.7 x 99.0 mm
Maximum Range	2,000 m
Effective Range	1,500 m
Operation	Short recoil, semiautomatic fire
Feed Device	10-round box magazine
Weight Loaded	13.6 kg
Overall Length	1,448.0 mm

40-mm M203 Grenade Launcher

Cartridge	40 x 46 mm
Operation	Breech loaded, sliding barrel
Effective Range	Point target 150 m; area target 350 m
Weight Loaded	1.63 kg
Overall Length	380 mm

NOTE: The M203 grenade launcher was originally designed for attachment to the M16-series assault rifles. The M203 can be used attached to an M16 assault rifle or M4 carbine, or as a standalone weapon attached to a modified stock.

40-mm Grenade Launcher M79



Range	
Effective, Point Target	150 m
Effective, Area Target	350 m
Maximum	400 m
Operation	Manual, break-open, single shot
Sights	Front, blade; rear, folding leaf, adjustable
Weight Unloaded	2.72 kg
Overall Length	737 mm

ARMOR

Main Battle Tank T-80U (Ukraine)

Crew	3
Armament	
Main Gun	125-mm smoothbore gun
Coaxial	7.62-mm machinegun
Auxiliary	12.7-mm heavy machinegun; gun-launched ATGM
Maximum Speed	70 km/h
Range	440 km
Gradient/Side Slope	60/40 percent
Vertical Step	1.0 m
Trench	2.85 m
Fording	1.8 m (5.0 m with preparation)
Combat Weight	46,300 kg
Length x Width x Height	9.7 x 3.6 x 2.3 m
Fuel Capacity	1,680 liters and two 200-liter removable drums

Main Battle Tank M60A1, M60A3

Crew	4
Armament	
Main	105-mm rifled cannon
Coaxial	7.62-mm machinegun
Commander's Cupola	12.7-mm machinegun
Other	Tank-fired ATGM
Maximum Speed	48 km/h
Road Range	480 km
Gradient/Side Slope	60/30 percent
Vertical Step	0.91 m
Trench	2.59 m
Fording	1.22 m (2.4 m with preparation)
Combat Weight	52,600 kg
Overall Length x Width x Height	9.4 x 3.6 x 3.3 m
Fuel Capacity	1,420 liters of diesel

Main Battle Tank Chieftain Mk 7/2C, Mk 15 Qayd Al Ardh

Crew	4
Armament	
Main	120-mm rifled gun
Coaxial	7.62-mm machinegun
Commander's Cupola	7.62-mm machinegun
Other	12.7-mm ranging machinegun (optional)
Maximum Speed	48 km/h
Road Range	500 km
Gradient/Side Slope	60/30 percent
Vertical Step	0.91 m
Trench	3.15 m
Fording	1.1 m
Combat Weight	54,100 kg
Overall Length x Width x Height	10.8 x 3.6 x 2.9 m
Fuel Capacity	950 liters of diesel

Main Battle Tank Challenger 2

Crew	4
Armament	
Main	120-mm rifled gun
Coaxial	7.62-mm chain gun
Loader's Position	Pintle-mounted 12.7-mm machinegun
Other	120-mm rounds may include high-explosive squash-head (HESH) and APFSDS
Maximum Speed	56 km/h
Road Range	450 km
Gradient/Side Slope	60/30 percent
Vertical Step	0.9 m
Trench	2.34 m
Fording	1.07 m
Combat Weight	62,500 kg
Overall Length x Width x Height	11.6 x 3.5 x 2.5 m (height to top of turret)
Fuel Capacity	1,592 liters of diesel

Scorpion Reconnaissance Vehicle

Crew	3
Armament	
Main	76-mm rifled gun
Coaxial	7.62-mm machinegun
Other	76-mm rounds may include HESH
Maximum Speed	80 km/h
Road Range	Up to 866 km
Gradient/Side Slope	60/45 percent
Vertical Step	0.5 m
Trench	2.06 m
Fording	1.07 m
Combat Weight	8,070 kg
Overall Length x Width x Height	4.4 x 2.2 x 2.1 m (height to top of turret)
Fuel Capacity	423 liters; limited multifuel capacity

NOTE: The Scorpion is air-transportable by C-130.

Armored Command Post Stormer

Crew; Passengers	3; 3 to 5
Armament	12.7-mm machinegun
Maximum Speed	80 km/h
Road Range	650 km
Gradient/Side Slope	60/35 percent
Vertical Step	0.6 m
Trench	1.75 m
Fording	1.1 m (1.8 with preparation)
Combat Weight	12,700 kg
Overall Length x Width x Height	5.3 x 2.7 x 2.3 m
Fuel Capacity	405 liters of diesel

NOTE: The Stormer is air-transportable by C-130.

Armored Fighting Vehicle Piranha II

Crew; Passengers	2 to 4; 12 (max. total seating 15)
Armament	12.7-mm machinegun in turret on some
Maximum Speed	100 km/h (10.5 km/h on water)
Road Range	780 km
Gradient/Side Slope	70/35 percent
Vertical Step	0.5 m
Fording	1.4 m (also amphibious)
Combat Weight	14,000 kg
Overall Length x Width x Height	7.0 x 2.6 x 1.9 m (height to top of hull)
Fuel Capacity	300 liters of diesel

Reconnaissance Vehicle VAB (G)

Crew; Passengers	2; 10 (crew of 3 for VDAA system)
Armament	12.7-mm machinegun (standard), shown above with twin 20-mm anti-aircraft guns
Maximum Speed	92 km/h (8.5 km/h on water)
Road Range	1,000 km
Gradient/Side Slope	60/35 percent
Vertical Step	0.65 m
Trench	1.5 m
Fording	Amphibious
Combat Weight	14,800 kg
Hull Length x Width x Height	6.0 x 2.5 x 2.1 m
Fuel Capacity	300 liters of diesel

NOTE: Shown above is the VDAA Twin 20-mm self-propelled anti-aircraft gun system based on the VAB.

Armored Reconnaissance Vehicle VBC 90 (Royal Guard)

Crew	3
Armament	
Main	90-mm rifled high-pressure cannon
Coaxial	7.62-mm machinegun
Maximum Speed	92 km/h
Road Range	1,000 km
Gradient/Side Slope	50/30 percent
Vertical Step	0.5 m
Trench	1.0 m
Fording	1.2 m
Combat Weight	13,500 kg
Overall Length x Width x Height	8.1 x 2.5 x 2.6 m (gun forward)
Fuel Type	Diesel

Armored Personnel Carrier ZSL-92 (WZ 551)

Crew; Passengers	3; 9 or 11
Armament	
Main	25-mm automatic cannon or 12.7-mm machinegun
Coaxial	7.62-mm machinegun
Maximum Speed	100 km/h
Road Range	800 km
Gradient/Side Slope	60/30 percent
Vertical Step	0.55 m
Trench	1.2 m
Fording	Amphibious
Combat Weight	16,500 kg
Overall Length x Width x Height	6.7 x 2.8 x 3.1 m (height to top of turret)
Fuel Capacity	400 liters of diesel

Armored Personnel Carrier Fahd 240

Mission	Probably internal security
Crew; Passengers	2; 10
Armament	Possibly a machinegun
Maximum Speed	35 km/h
Road Range	400 km
Gradient/Side Slope	70/30 percent
Vertical Step	0.5 m
Trench	0.8 m
Fording	0.7 m
Combat Weight	12,500 kg
Overall Width x Height	2.5 x 2.9 m
Fuel Type	Diesel

Scout Car Panhard VBL

Crew; Passengers	2 or 3; 4 in squad carrier variant
Armament	7.62- or 12.7-mm machinegun (standard); other options include ATGMs or SAMs
Maximum Speed	100 km/h (4.0 km/h on water)
Road Range	600 km
Gradient/Side Slope	50/30 percent
Trench	0.5 m
Fording	Amphibious
Combat Weight	4,200 kg
Overall Length x Width x Height	3.8 x 2.0 x 2.1 m
Fuel Type	Diesel

NOTE: Omani Royal Guard Panhard VBL shown above with Mistral SAMs in an ALBI launch system.

ARTILLERY

122-mm Multiple Rocket Launch System Type 90, 90A, 90B

Crew; Section Size	4; 6
Tube Configuration	4 rows of 10 tubes
Ammunition Types	HE-frag..; HE-steel-ball; HE-steel-ball-incendiary; DPICM: AP mine-laying; AT mine-laying; incendiary
Range	9,600 to 40,000 m (minimum range for minelaying rocket is 6,000 m)
Rate of Fire	40 rounds in 20 seconds
Traverse Limits	102 degrees left or right (180 degrees to reload)
Elevation Limits	0 to +55 degrees
Emplacement/Displacement Time	6 minutes
Reload Time	3 minutes, using automated reload pack
Vehicle Maximum Speed	85 km/h
Road Range	600 to 800 km, depending on variant
Fording	0.7 m
Travel Weight, Type 90	20,000 kg
Travel Length x Width x Height	
Type 90	9.84 x 2.50 x 3.25 m
Type 90A, 90B	9.70 x 2.50 x 3.03 m

NOTE: The automated reload pack is positioned behind the cab. The canopy can be retracted to allow access to the reload pack, and fully extended to cover the launcher. The three variants use different prime movers.

155-mm Self-propelled Gun-Howitzer G-6

Crew; Section Size	2 to 5; 7
Gun Caliber	155.0 mm x 45.0
Ammunition Types	HE-frag.., DPICM, illumination, smoke
Range	
Direct Fire	3,000 m
Conventional	30,000 m
Extended	Up to 50,000 m
Rate of Fire	3 rounds per minute
Traverse Limits	40.0 degrees left or right
Elevation Limits	–5.0 to +75.0 degrees
Emplacement/Displacement Time	1 minute/30 seconds
Vehicle Maximum Speed	85 km/h
Road Range	700 km
Grade	40 percent
Trench	1.0 m
Fording	1.0 m
Travel Weight	47,000 kg
Travel Length x Width x Height	10.4 x 3.4 x 3.5 m

155-mm Towed Howitzer FH-70

Crew; Section	7; 8
Gun Caliber	155.0 mm x 39
Ammunition Types	HE-frag.., DPICM, smoke, illumination
Range	
Conventional	24,700 m
Extended	30,000 m
Rate of Fire	
Burst	3 rounds in 13 seconds
Normal	6 rounds per minute
Sustained	2 rounds per minute
Traverse Limits	28 degrees left or right
Elevation Limits	–5 to +70 degrees
Emplacement/Displacement Time	Less than 2 minutes
Travel Weight	9,300 kg
Travel Length x Width x Height	9.8 x 2.6 x 2.6 m

NOTE: An APU, attached to the carriage, is used to drive the main wheels for moving the howitzer, provide hydraulic power for steering and raising and lowering the main and trail wheels, and allow semiautomatic operation. In self-propelled mode the FH-70 can attain speeds up to 16 km/h, negotiate slopes up to 34 percent, and ford to a depth of 0.75 m. Under tow, it can ford to a depth of 1.5 m.

130-mm Towed Gun Type 59-1

Gun Caliber	130.0 mm x 52.0
Ammunition Types	HE-frag.., HE-fragmentation-incendiary, DPICM, illumination, smoke
Range	
Direct Fire	1,170 m
Indirect Fire	7,800 to 27,150 m (38,000 m extended)
Rate of Fire	
Burst	8 to 10 rounds per minute
Normal	6 rounds per minute
Traverse Limits	Left 30.0 degrees, right 28.0 degrees
Elevation Limits	–2.5 to +45.0 degrees
Travel Weight	6,300 kg
Travel Length x Width x Height	10.8 x 2.4 x 2.8 m

130-mm Towed Gun M-46

Crew; Section	7; 8
Gun Caliber	130.0 mm x 58.5
Range, Indirect Fire	5.4 to 27.2 km (direct fire up to 1.2 km)
Rate of Fire	
Burst	8 rounds per minute
Normal	6 rounds per minute
Sustained	5 rounds per minute
Traverse Limit	25 degrees left or right
Elevation Limits	–2 to +45 degrees
Emplacement/Displacement Time	6/7 minutes
Travel Weight	8,450 kg
Travel Length x Width x Height	11.7 x 2.5 x 2.6 m

122-mm Howitzer D-30 Lyagushka

Crew	5
Gun Caliber	122.0 mm x 38.0
Range	
Direct Fire	1,000 m
Indirect Fire	15,300 m
Rate of Fire	
Burst	8 rounds per minute
Normal	6 rounds per minute
Sustained	4 rounds per minute
Traverse Limit	360 degrees
Elevation Limits	–7 to +70 degrees
Emplacement/Displacement Time	1.5/3 minute
Combat Weight	3,210 kg
Travel Length x Width x Height	5.40 x 1.95 x 1.68 m

105-mm Towed Field Gun-Howitzer L118 (Light Gun)

Crew; Section	7; 8
Range, Indirect Fire	2,500 to 17,200 m
Rate of Fire	
Burst	8 rounds per minute
Normal	6 rounds per minute
Sustained	3 rounds per minute
Traverse Limit	360 degrees (on platform)
Elevation Limits	–5.5 to +70 degrees
Emplacement/Displacement Time	<2 minutes
Travel Weight	1,860 kg
Travel Length x Width x Height	4.9 x 1.8 x 1.4 m

120-mm Towed Mortar MO-120-LT

Crew; Section	4; 5
Ammunition Types	HE-frag. (PR 14, PR PA), IR illumination
Range	200 to 9,000 m (varies with projectile type)
Rate of Fire	
Burst	20 rounds per minute
Normal	8 rounds per minute, up to 60 rounds
Sustained	4 rounds per minute
Traverse Limits	4.0 degrees left or right
Elevation Limits	+30 to +85 degrees
Travel Weight	247 kg
Travel Length x Width	2.20 x 1.50 m
Emplacement/Displacement Time	<3/<2 minutes
Prime Mover	4x4 truck

NOTE: a range of 13,000 m is possible with the PR PA rocket-assisted projectile.

4.2-in (107-mm) Mortar M30

Crew	6
Ammunition Types	HE-frag., illumination, and smoke
Range	920 to 6,600 m
Rate of Fire	
Sustained	3 rounds per minute
Normal	9 rounds per minute for 5 minutes
Burst	18 rounds per minute for 1 minute
Traverse Limits	360 degrees
Elevation Limits	+40 to +65 degrees
Weight Complete	305 kg
Barrel Length	1.524 m
Prime Mover	2-ton truck (mortar not normally towed)

81-mm Mortar L16

Crew; Section Size	3; 5
Range	5,650 m
Rate of Fire	
Sustained	10 rounds per minute
Normal	15 rounds per minute
Burst	20 rounds per minute
Traverse Limits	
At +45 Degrees of Elevation	5.5 degrees left or right
At +85 Degrees of Elevation	18.0 degrees left or right
Elevation Limits	+45.0 to +85.0 degrees
Feed	Muzzle loaded
Weight Empty	38.3 kg
Barrel Length	1,280 mm

ANTI-ARMOR

MILAN 1, 2 Antitank Guided Weapon

Crew	1
Effective Range	25 to 2,000 m
Warhead	HEAT (1.36 or 1.79 kg HE)
Guidance	Wire-guided SACLOS
Armor Penetration	Up to 880 mm
Missile Diameter; Wingspan	125 mm; 267 mm
Combat Weight (munition in tube)	12.23 kg
System Length x Diameter	1.3 x 0.133 m

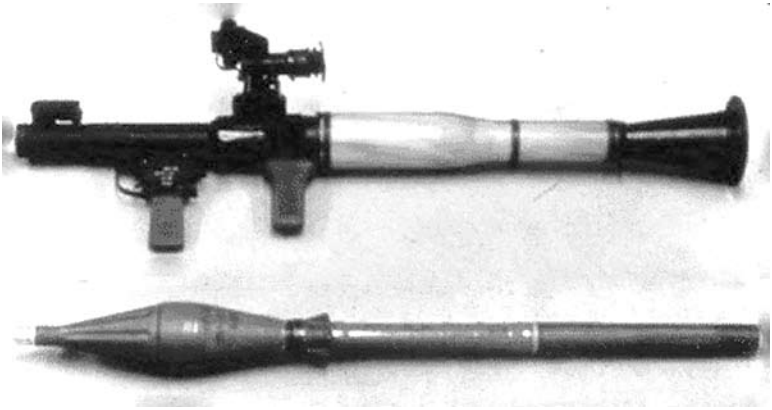
NOTE: Base version is MILAN 1. MILAN 2 is designed for increased armor penetration. The system consists of the missile, sealed in a transport-launch tube, and a firing post.

Antitank Guided Missile System BGM-71A TOW

Type	Tube-launched optically tracked, wire-command-link-guided missile
Crew	4
Key System Components	Tripod, traversing unit, launch tube, optical sight, missile guidance set
Range	65 to 3,750 m
Warhead	HEAT
Guidance	Wire command link
Launcher Weight	93 kg
Missile Weight	28.1 kg
Missile Length x Max. Diameter	1,174 x 221 mm (TOW 2A)

NOTE: TOW can also be mounted to vehicles and helicopters.

40-mm Grenade Launcher RPG-7



Type	Shoulder-fired rocket-propelled grenade launcher
Grenade Types	HEAT, tandem, thermobaric, shaped-charge, HE-frag., and incendiary (grenades consist of warhead and two-stage rocket motor)
Effective Range	
Moving Target	330 m
Stationary Target	500 m
Maximum Range (Self Destruct)	Approximately 950 m (4.5 seconds after launch)
Rate of Fire	4 to 6 rounds per minute
Grenade Caliber	40.0 mm
Armor Penetration	260 mm or greater (depending on grenade)
Launcher Length x Diameter	950 x 40 mm

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 nose cap, pull safety pin. RPG IS READY TO FIRE. (3) Place launcher over shoulder, sight target, squeeze trigger. WARNING: ENSURE BACKBLAST AREA IS CLEAR.

Disposable Light Antitank Weapon LAW 80

Crew	1
Rocket Diameter; Wingspan	94 mm
Effective Range	500 m
Warhead Type	HEAT
Guidance	Unguided
Armor Penetration	>700 mm
Travel Weight, System	10 kg
Launcher Length	
Travel Mode	1.0 m
Extended for Firing	1.4 m

NOTE: Warhead arms 10 to 20 m from launch tube. A 9-mm semiautomatic spotting rifle with five rounds ballistically matched to the rocket is built into the system. The launcher can be extended and retracted any number of times before the rocket is launched. Shown above extended for firing; note end caps on ground.

AIR DEFENSE

Towed Low-Level Surface-to-Air Missile System Rapier

Type	Single-stage low-altitude SAM system
Range	0.5 to >7,000 m
Engagement Altitude	<15 to >3,000 m
Payload	1.4-kg SAP warhead with 0.4 kg HE with crush fuze or combined fragmentation-armor-piercing with impact and proximity fuzing
Fuze	Impact (crush) or impact-proximity
Guidance	Optical SACLOS, thermal SACLOS, or ACLOS using tracking radar
Missile Weight	43 kg
Wingspan	0.381 m
Missile Length x Diameter	2.24 x 0.133 m
Launcher Weight	1,227 kg
Launcher Length x Width x Height	4.06 x 1.77 x 2.13 m

Point Air Defense Missile System Crotale CN2

Type	Ship-based SAM system
Range	11 km (5.9 nmi)
Maximum Engagement Altitude	6,000 m
Payload	13-kg focused-fragment warhead
Fuze	RF proximity
Guidance	Command
Missile Weight	73 kg
Missile Length x Diameter	2.34 x 0.165 m
Launch Container Weight	144 kg
Container Length x Diameter	3.2 x 0.515 m

NOTE: Shown above is a Crotale CN2 launcher on Oman's QAHIR AL AMWAJ Class corvette.

Low-Altitude Manportable Surface-to-Air Missile System
Mistral 1, Mistral 2

Basic System Components	2-stage missile, tripod, electronics box, sighting system, battery-coolant unit
Effective Range	300 to >6,000 m varies with missile and target
Effective Altitude	5 to 3,000+ m
Warhead	3-kg HE-fragmentation
Fuze	Contact and active laser proximity
Guidance	Passive IR-homing
Weight of Container and Missile	24 kg (missile 19 kg)
Wingspan	0.2 m
Missile Length x Diameter	1.86 x 0.0925 m

NOTE: Weights are for Mistral 1, MIstral 2 is lighter. Oman uses the ALBI turreted launch system (see VBL armored vehicle), which has two launchers and carries six missiles.

Manportable Surface-to-Air Missile System Javelin

Basic System Components	Missile in sealed launch container, aiming unit
Effective Range	300 to 4,500 m
Effective Altitude	10 to 3,000 m
Warhead	2.74-kg HE-frag./shaped-charge
Fuze	Impact or proximity, selectable
Guidance	Semiautomatic command-to-line-of-sight (SACLOS)
Missile Launch Weight	12.7 kg
Wingspan	275 mm
Missile Length x Diameter	1,390 x 76 mm

NOTE: A light-weight multiround manportable launcher is available. Multiround launchers are available for shipborne installations..

Manportable Surface-to-Air Missile System Sakr Eye

Type	2-stage, low-altitude manportable SAM system
Effective Range	4,400 m
Effective Altitude	30 to 2,400 m
Maximum Target Speed	Outbound 800 km/h; inbound 540 km/h
Number of Reloads	5 per launcher
Warhead	1-kg HE-fragmentation
Fuze	Contact and graze
Guidance	Infrared passive homing
Combat Weight	15 kg
Missile Length x Diameter	1.4 x 0.072 m

NOTE: Sakr Eye is based on the Strela-2 (SA-7) MANPADS. Shown above with optional night sight and IFF unit.

Manportable Surface-to-Air Missile System
9K32/9K32M Strela-2, -2M (SA-7a, -7b GRAIL)

Type	2-stage, low-altitude manportable SAM system
Effective Range	800 to 3,200 m (4,200 m for Strela-2M)
Effective Altitude	50 to 1,500 m (2,300 m for Strela-2M)
Maximum Target Speed	Outbound 800 km/h; inbound 540 km/h
Number of Reloads	5 per launcher
Warhead	1.17 kg HE-frag. with contact fuze
Guidance	Infrared passive homing
Combat Weight	9.15 kg (9.6 for Strela-2M)
Launcher Length	1.49 m

NOTE: Launcher may be reused up to five times.

40-mm Air Defense Artillery System Bofors L/60

Type	Single-barrel antiaircraft gun
Crew	3 to 6
Caliber	40.0 mm x 311R
Ammunition	HE-T, APHC-T, PFHE, AP-T
Range	
Tactical	1,500 m on carriage, 2,500 m off carriage
Horizontal	9,900 m
Vertical	6,700 m
Maximum Rate of Fire	120 rounds per minute
Operation	Recoil, automatic fire
Feed Device	4-round clip
Traverse Limit; Rate	Unlimited; 60 degrees per second powered, 30 degrees per second manual
Elevation Limit; Rate	–6 to +90 degrees; 32 degrees per second powered, 20 degrees per second manual
Emplacement Time	3 minutes
Weight	2,676 kg
Length x Width	5.73 x 1.83 m
Travel Speed (towed)	60 km/h

35-mm Twin Air Defense Artillery Gun GDF-001, -002, -003, and -005

Crew	3 (GDF-001 to -003) or 1 (GDF-005)
Ammunition	35- x 228-mm HEI, HEI-T, SAPHEI-T, APDS-T, PFHE
Range	
Tactical Anti-aircraft	Up to 4,000 m, depending on radar system used
Maximum Vertical	8,500 m
Maximum Horizontal	11,200 m
Rate of Fire per Barrel	550 rounds per minute
Feed Device	7-round clip packed in a 56-round reload container
Emplacement/Displacement Time	2 to 4/5 minutes
Traverse Limits; Rate	Unlimited; 120 degrees per second
Elevation Limits; Rate	–5 to +92 degrees; 60 degrees per second
Combat Weight	6,300 to 6,400 kg (GDF-001 to -003), 7,700 (GDF-005)

NOTE: GDF-005 shown.

23-mm Twin Anti-aircraft Gun ZU-23-2

Crew	5
Ammunition Types	23.0 x 152B mm API-T, HEI, HEI-T
Range	
Tactical Antiaircraft	2,500 m
Maximum Vertical	5,100 m
Maximum Horizontal	7,000 m
Rate of Fire per Barrel	800 to 1,000 rounds per minute
Traverse Limit; Rate	360 degrees; 74 degrees per second
Elevation Limit; Rate	–10 to +90 degrees; 54 degrees per second
Weight	950 kg
Length x Width x Height	4.60 x 1.86 x 2.07 m
Platform	2-wheel towed 2A13 carriage or various vehicles.

AIRCRAFT

F-16C, -16D Advanced Block 50 Fighting Falcon

Mission	Multirole fighter
Crew	1 (C) or 2 in two tandem cockpits (D)
Maximum Level Speed	> Mach 2.0 at 12,200 m
Ferry Range	2,415 nmi (with external fuel, without CFTs)
Combat Radius	Up to approximately 1,000 nmi, depending on fuel and weapons configuration
Service Ceiling	>15,240 m
Armament	
Primary	20-mm multibarrel cannon, wingtip air-to-air missiles
Secondary	Combination of precision guided or unguided air-to-surface weapons, antiship missiles, antiradiation missiles, air-to-air missiles
Maximum External Load	
F-16C (with CFTs)	8,742 (9,190) kg
Maximum Takeoff Weight	21,772 kg (Block 52D with full external load)
Weight Empty	
F-16C (with CFTs)	9,017 (9,466) kg
F-16D (with CFTs)	9,419 (9,867) kg
Length x Wingspan x Height	15.03 x 9.45 x 5.09 m (Block 52)

NOTE: CFT – conformal (external) fuel tank.

Jaguar International OS, OB

Mission	
OB	Operational trainer
OS	Tactical support
Crew	OB 2 tandem; OS 1
Maximum Level Speed	917 kn at 11,000 m
Ferry Range	1,902 nmi with external fuel stores
Typical Combat Radius	
Hi-lo-hi, Internal (External) Fuel	460 (760) nmi
Lo-lo-lo, Internal (External) Fuel	290 (495) nmi
Armament	
Primary	2x 30-mm cannon; 2x AAMs
Secondary	Various bombs, cluster bombs, air-to-surface missiles or rockets, antiradiation missiles
Maximum External Load	4,763 kg
Maximum Takeoff Weight	15,700 kg
Typical Weight Empty	7,000 kg
Length x Wingspan x Height	
OB	17.53 x 8.69 x 4.89 m
OS	16.83 x 8.69 x 4.89 m

Hawk Mk 203

Mission	Multirole fighter; reconnaissance
Crew	1
Maximum Level Speed	540 kn at sea level
Economy Cruising Speed	430 kn at 12,500 m
Ferry Range	1,365 nmi with 2x drop tanks
Service Ceiling	13,715 m
Typical Combat Radius	
Airspace Denial	100 nmi with 2-hour loiter on station
Close Air Support	115 nmi
Armament	Various air-to-air missiles, gun pods, bombs, rockets, air-to-surface missiles
Maximum Weapon Load	3,000 kg
Maximum Takeoff Weight	9,100 kg
Basic Weight Empty	4,450 kg
Length x Wingspan x Height	11.38 x 9.39 x 4.13 m

Hawk Mk 103

Mission	Ground Attack
Crew	2 tandem
Maximum Level Speed	540 kn at sea level
Ferry Range	1,360 nmi
Endurance	Approximately 2 hours
Service Ceiling	13,565 m
Armament	30-mm gun pod and various rockets, bombs, cluster bombs, air-to-air missiles
Maximum Weapon Load	3,000 kg
Maximum Takeoff Weight	9,100 kg
Weight Empty	4,400 kg
Overall Length x Wingspan x Height	12.43 x 9.08 x 3.98 m

One-Eleven Series 485GD

Mission	Short- to medium-range transport
Crew; Passengers	2; up to 89
Maximum Level Cruise Speed	470 kn at 6,400 m
Economy Cruising Speed	400 kn at 7,620 m
Range	Up to 2,549 nmi
Maximum Cruising Height	10,670 m
Maximum Payload	9,647 kg
Maximum Takeoff Weight	41,730 to 44,678 kg
Operating Weight Empty	23,464 kg
Length x Wingspan x Height	28.50 x 28.50 x 7.47 m

NOTE: The 485GD is very similar to the 475 model shown above.

SC.7 Skyvan 3M (and Seavan)

Mission	Transport; maritime surveillance, search and rescue
Crew; Passengers	1 or 2; 22 equipped troops, 16 paratroops and a dispatcher, or 12 stretcher cases and two medical attendants
Maximum Cruising Speed	175 kn at 3,050 m
Economy Cruising Speed	150 kn at 3,050 m
Range, Typical Freight Mission	208 nmi
Service Ceiling	6,705 m
Max. Payload , Normal (Overload)	2,358 (2,721) kg
Max. T-O Weight, Normal (Overload)	6,214 (6,577) kg
Basic Weight Empty	3,356 kg
Length x Wingspan x Height	12.21 x 19.79 x 4.60 m

NOTE: Skyvan is capable of STOL. STOL takeoff run is approximately 240 m. Executive version has luxury accommodation for 9 passengers. One of Oman's Skyvans has been modified with oil spill dispersant spraying equipment, including fixed spray-bars on the rear fuselage; its internal tanks and associated equipment are quickly removable for freight transport. Three Skyvans have been locally modified for maritime surveillance and search and rescue missions.

PC-9M

Type	Advanced turbo trainer
Crew	2
Maximum Operating Speed	320 kn
Maximum Cruising Speed	270 kn at sea level
Ferry Range	1,065
Service Ceiling	11,580 m
Endurance	4:30
Armament	12.7-mm gun pods, rocket pods possible
Maximum Underwing Stores	1,040 kg
Maximum Takeoff Weight	3,200 kg
Basic Weight Empty	1,725 kg
Length x Wingspan x Height	10.13 x 10.18 x 3.26 m

SA 330J Puma

Type	Medium multimission helicopter
Crew; Passengers	2; 18
Armament	Possibly a side-firing 20-mm gun, axial-firing 7.62-mm machineguns, rockets, ATGMs
Maximum Speed	167 kn
Range, Full Load	310 nmi at 120 kn
Service Ceiling	4,800 m
Maximum Payload	3,448.0 kg
Cargo Handling or Sling Load	3,200 kg
Normal Design Takeoff Weight	7,400 kg
Basic Weight Empty	3,536 kg
Main Rotor	
Number of Blades	4
Diameter	15.0 m
Tail Rotor	
Number of Blades	5
Diameter	3.04 m
Fuselage Length x Width x Height	14.06 x 3.50 x 4.54 m

C-130H Hercules

Mission	Tactical transport and multimission
Crew	4 or 5
Passengers	92 troops, 64 paratroopers, or 74 litter patients with 2 attendants
Maximum Cruise Speed	325 kn
Range	
With Maximum Payload	2,046 nmi
With Standard Load, Max. Fuel	4,250 nmi
Service Ceiling	10,060 m
Maximum Payload	19,356 kg
Maximum Normal Takeoff Weight	70,310 kg
Operating Weight Empty	34,686 kg
Length x Wingspan x Height	29.79 x 40.41 x 11.66 m

NH90 TTH

Mission	Tactical transport
Crew; Passengers	1 to 3; 20
Armament	Possible weapons include Stinger AAMs
Maximum Speed	165 kn
Range	432 nmi
Endurance	4:30
Service Ceiling	6,000 m
Maximum Payload	2,500 kg
Cargo Handling or Sling Load	
Normal Design Takeoff Weight	10,000 kg
Maximum Design Takeoff Weight	10,600 kg
Basic Weight Empty	5,945 kg
Main Rotor	
Number of Blades	4
Diameter	16.3 m
Tail Rotor	
Number of Blades	4
Diameter	3.2 m
Fuselage Length x Width x Height	16.13 x 3.63 x 4.25 m

AS 332C, AS 332L1 Super Puma

Type	Multirole helicopter; VIP transport
Crew; Passengers	
AS 332C	2; 19
AS 332L1	2; 20
Armament (Military Versions)	Possibly a side-firing 20-mm gun, axial-firing 7.62-mm machineguns, rockets, ATGMs
Maximum Speed	167 kn
Range, Full Load	310 nmi at 120 kn
Service Ceiling	Approximately 4,500 m
Maximum Payload	3,086.0 kg
Cargo Handling or Sling Load	3,200 kg
Maximum Design Takeoff Weight	
AS 332L1	8,700 kg (9,000 kg with external load)
Basic Weight Empty	Approximately 4,500 kg
Main Rotor	
Number of Blades	4
Diameter	15.58 m
Tail Rotor	
Number of Blades	5
Diameter	3.05 m
Fuselage Length x Width x Height	
AS 332C	15.52 x 3.79 x 4.92 m
AS 332L1	16.29 x 3.79 x 4.92 m (height overall)

NOTE: VIP configuration has seating for 8 to 15 passengers.

AW 139

Type	Medium Lift Helicopter
Crew; Passengers	2; 15
Maximum Continuous Speed	
Maximum Dash Speed	167 kg
Service Ceiling	6,096 m
Range, Normal Takeoff Weight	442 nmi at 140 kn and 6,000 kg
Maximum Payload	2,198.0 kg
Maximum Design Takeoff Weight	6,400.0 kg
Basic Empty Weight	3,622.0 kg
Main Rotor	
Number of Blades	5
Diameter	13.80 m
Tail Rotor	
Number of Blades	4
Diameter	2.70 m
Fuselage Length x Width x Height	13.52 x 2.26 x 3.72 m

WG.13 Super Lynx Mk 120 (Series 300)

Mission	Antisubmarine warfare; armed escort; search and rescue
Crew; Passengers	2; 9
Maximum Continuous Speed	150 kn
Cruise Speed	132 kn
Range, Max. Takeoff Weight	540 nmi at 132 kn (using auxiliary fuel tanks)
Armament (optional)	Torpedoes or anti-ship missiles
Maximum Design Takeoff Weight	5,330 kg
Manufacturer's Basic Weight	3,291 kg
Main Rotor	
Number of Blades	4
Diameter	12.80 m
Tail Rotor	
Number of Blades	4
Diameter	2.36 m
Overall Length x Width x Height	13.33 x 2.94 x 3.67 m

AB 212

Type	Multirole utility helicopter
Crew; Passengers	2; 13
Armament	Provisions for door-mounted crew-served weapons
Maximum Dash Speed	135 kn
Maximum Range	270 nmi
Cargo Handling or Sling Load Cap.	2,268 kg
Maximum Design Takeoff Weight	5,080 kg
Basic Empty Weight	Approximately 2,800 kg
Main Rotor	
Number of Blades	2
Main Rotor Diameter	14.6 m
Tail Rotor	
Number of Blades	2
Main Rotor Diameter	2.6 m
Fuselage Length x Width x Height	12.9 x 2.9 (skid width) x 4.0 m

Bell 205, 205A-1 (UH-1H Iroquois); HH-1H

Type	Medium-Lift Transport
Crew; Passengers	2; 11
Maximum Speed	115 kn
Range	270 nmi
Armament	Provisions for crew-served, door-mounted weapons
Cargo Handling or Sling Load	1,814.4.kg
Maximum Takeoff Weight	4,309.2 kg
Basic Empty Weight	2,237.0 kg
Main Rotor	
Number of Blades	2
Diameter	14.72 m
Tail Rotor	
Number of Blades	2
Main Rotor Diameter	2.59 m
Fuselage Length x Width x Height	17.37 x 2.61 x 3.87 m (with skid)

AB-206B Jet Ranger II

Role	Light-lift transport
Seating	4
Armament	70-mm rockets possible
Maximum Dash Speed	122 kn
Range, Typical Mission	300 nmi at 118 kn
Service Ceiling	6,100 m
Maximum Takeoff Weight	1,451.5 kg
Empty Weight	Approximately 1,000 kg
Main Rotor	
Number of Blades	2
Diameter	10.2 m
Tail Rotor	
Number of Blades	2
Diameter	1.7 m
Fuselage Length x Width x Height	9.6 x 1.96 x 2.9 m (including skids)

SHIPS

QAHIR AL AMWAJ Class FFL
(VIGILANCE, VOSPER THORNYCROFT 83-METER Class)

LOA x Max. Beam x Max. Draft	83.7 x 11.5 x 3.5 m
Displacement, Full Load	1,450 metric tons
Complement	81 plus 21 spare berths
Speed, Full Power	30.5 kn
Range	4,000 nmi at 10 kn
Armament	
Missiles	2x quadruple launchers for Exocet antiship missiles; 8-tube launcher for Crotale NG SAMs
Guns	1x 76-mm x 62; 2x 20-mm x 85; 2x 12.7-mm
Torpedoes	
Other	
Aviation	Platform for Super Puma
Radar Systems	
Surface-Search/Navigation	KH-1007
Early Warning	MW-08
Fire Control	Signaal STING
Acoustic Systems	
Antisubmarine Warfare	ATAS
Navigation	Echo sounder
Electro-optical Systems	
Fire Control	STING
Target Designator	TDS
Missile Control	TRAKIR

AL BUSHRA Class PC

LOA x Max. Beam x Max. Draft	54 x 8 x 2.5 m
Displacement, Full Load	473 metric tons
Complement	24
Speed, Full Power	24 kn
Range	2,400 nmi at 15 kn
Guns	1x 76-mm x 62; 2x 20-mm x 85; 2x 12.7-mm
Radar Systems	
Surface-Search/Navigation	KH-1007
Fire Control/Target Tracking	CEROS-200
Acoustic Navigation System	Echo sounder
Electro-optical Systems	
Weapon Control	Possibly 9LV 207 Mk 3

PROVINCE (DHOFAR) Class PTG

LOA x Max. Beam x Max. Draft	56.7 x 8.2 x 2.4 m
Displacement, Full Load	400 metric tons
Complement	44
Speed	38 kn
Range	2,000 nmi at 18 kn
Armament	
Missiles	2x triple or quadruple launchers for Exocet antiship missiles
Guns	1x 76-mm x 62; 1x twin 40-mm x 70; 1x or 2x 20-mm x 85; 2x 12.7-mm x 90
Radar Systems	
Surface-Search	Decca 1226
Air/Surface-Search	AWS-4 or AWS-6 (some in class)
Target Acquisition	9LV-200 TA (most in class)
Target Tracking	9LV-200 TT (most)
Acoustic Navigation System	MS 45 echo sounder
Electro-optical Systems	
Fire Control	9LV100 and 9LV200 (most) or Sea Archer 2
Fire Director	OFD (component of Sea Archer system)

SEEB (VOSPER 25-M) Class PB

LOA x Max. Beam x Mean Draft	25.2 x 5.8 x 1.6 m
Displacement, Full Load	90 metric tons
Complement	18
Speed, Full Power	25 kn
Range	750 nmi at 14 kn
Guns	1x 20-mm x 70; 2x 7.62-mm
Navigation Radar System	Decca 914 RM

KARLSKRONA 29-M (CG 29) Class WPB

LOA x Max. Beam x Max. Draft	28.9 x 5.4 x 1.3 m
Displacement, Full Load	84 metric tons
Complement	13
Speed, Full Power	25 kn
Range	600 nmi at 15 kn
Guns	2x 20-mm x 70
Navigation Radar Systems	Decca 110; Decca 50

NASR AL BAHR (BROOKE MARINE 93-M) Class LST

LOA x Beam x Mean Draft	93 x 15.5 x 2.6 m
Displacement, Full Load	2,500 metric tons
Complement	55
Speed, Full Power	15 kn
Range	4,000 nmi at 13 kn
Guns	2x twin 40-mm x 70; 2x 20-mm x 70; 2x 12.7-mm
Equipment	1x 16-Mton traveling crane; 2x LCPs
Military Lift	
Embarked Troops	240
Main Battle Tanks	7
Beaching Load	400 metric tons
Aviation	Platform for Super Puma
Radar Systems	
Surface-Search/Navigation	Decca 1630S AC
Navigation	Decca 1290 RM
Other	Type S810
Acoustic Navigation System	Echo sounder
Electro-optical Systems	
Fire Control	9LV100

SABA AL BAHR (VOSPER 30-M) Class LCU

LOA x Max. Beam x Max. Draft	30 x 8.2 x 1.5 m
Displacement, Full Load	260 metric tons
Complement	11
Speed, Full Power	8 kn
Range	1,800 nmi at 8 kn
Military Lift	2x main battle tanks
Beaching Load	100 metric tons (up to 45 tons on cargo deck)
Radar System	
Surface-Search/Navigation	Decca 50

LEWIS OFFSHORE 25-M (AL NEEMRAN) Class LCU

LOA x Max. Beam x Max. Draft	25.5 x 7.4 x 1.8 m
Displacement, Full Load	230 metric tons
Complement	8
Speed, Full Power	8 kn
Military Lift	2x main battle tanks
Radar Systems	
Surface-Search/Navigation	Decca 50

FULK AL SALAMAH Class WAG

LOA x Max. Beam x Max. Draft	136.3 x 21 x 6 m
Displacement, Full Load	1,000 metric tons
Speed, Full Power	19.5 kn
Equipment	2x LCPs; 2x hydraulic cranes; 1x kingpost with boom
Aviation	Flight deck and twin hangar for up to 2x Super Pumas
Embarked Troops	240
Navigation Radar System	2x Racal Decca
Acoustic Navigation System	Echo sounder

NOTE: may be armed with Javelin SAM system.

AL SULTANA Class AK

LOA x Max. Beam x Max. Draft	65.7 x 10.8 x 4.2 m
Displacement, Full Load	1,700 metric tons
Complement	12
Speed, Maximum Sustained	11.2 kn
Equipment	1-Mton traveling gantry crane
Surface-Search/Navigation	Decca 1226

AL MABRUKAH AXT

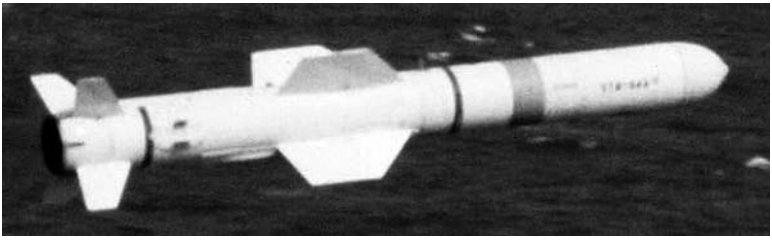
LOA x Max. Beam x Max. Draft	61.5 x 10.7 x 3.1 m
Displacement, Full Load	945 metric tons
Complement	71 plus 37 trainees
Speed, Full Power	16.3 kn
Range	4,000 nmi at 15 kn
Guns	1x 40-mm x 70; 2x 20-mm x 85; 4x 12.7-mm
Equipment	2x Rotork landing craft
Aviation	Helicopter platform
Radar Systems	
Surface-Search/Navigation	Decca 1226
Acoustic Navigation System	MS 32F echo sounder

AL RAHMANIYA Class YGS

LOA x Max. Beam x Max. Draft	15.5 x 4 x 1 m
Displacement, Full Load	23.6 metric tons
Complement	6
Speed, Full Power	14 kn
Range	500 nmi at 12 kn
Navigation Radar System	Decca 50
Acoustic Systems	
Navigation/Survey	Echo Sounder; MS 48

ANTISHIP MISSILES

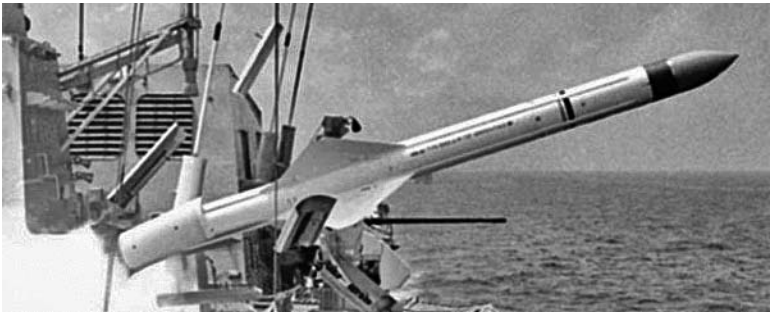
AGM-84D (Block 1C) Harpoon



Type	Air-launched long-range radar-guided antiship missile
Range	120 nmi
Warhead	222-kg HE blast-penetration
Guidance	Inertial with active radar
Fuze	Delayed-action impact
Launch Weight	556 kg
Wingspan	0.91 m
Length x Diameter	3.85 x 0.343 m

NOTE: Air platforms include P-3, F-15, and F-16. Block 1C missiles follow a sea-skimming terminal attack profile.

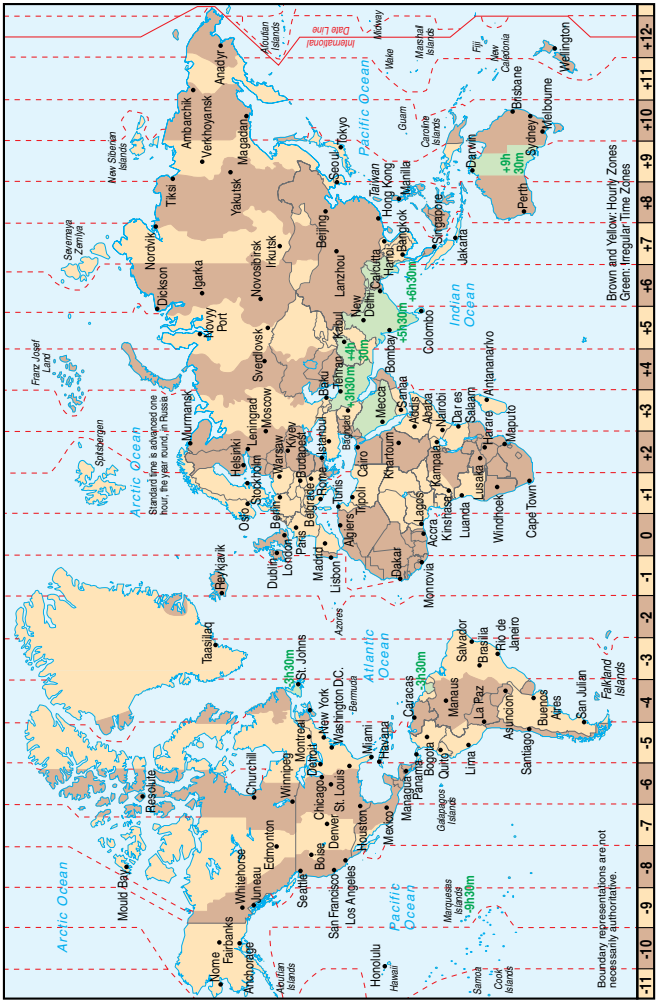
AM 39, MM 40 Block 2 Exocet



Type	
AM 39	Air-launched medium-range antiship missile
MM 40 Block 2	Ship-launched medium-range antiship missile
Range	38 nmi
Payload	165-kg blast-fragmentation warhead
Guidance	Inertial and active radar
Fuze	Delayed impact and proximity
Launch Weight	
AM 39	670 kg
MM 40 Block 2	870 kg
Wingspan	Approximately 1 m
Missile Length x Diameter	
AM 39	4.69 x 0.35 m
MM 40 Block 2	5.8 x 0.35 m

NOTE: Maximum range is achieved with the aid of over-the-horizon targeting data from aircraft or another ship. The Exocet follows a sea-skimming flight profile; the MM 40 can fly at an altitude of 2 to 3 m, depending on Sea State. The MM 40 also can be preprogrammed to follow a specific route to the target area and carry out specific flight maneuvers.

APPENDIX B:
INTERNATIONAL TIME ZONES



Coordinated Universal Time (UTC)

To use the table, go to the country you are interested in, and add the number of hours corresponding to the United States time zone to the current time. The UTC is also known as Greenwich Mean Time (GMT).

Country	UTC	Eastern	Central	Mountain	Pacific
Afghanistan	+4.5 H	+9.5 H	+10.5 H	+11.5 H	+12.5 H
Albania	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Algeria	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
American Samoa	-11.0 H	-6.0 H	-5.0 H	-4.0 H	-3.0 H
Andorra	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Angola	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Antarctica	-2.0 H	+3.0 H	+4.0 H	+5.0 H	+6.0 H
Antigua and Barbuda	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Argentina	-3.0 H	+2.0 H	+3.0 H	+4.0 H	+5.0 H
Armenia	+4.0 H	+9.0 H	+10.0 H	+11.0 H	+12.0 H
Aruba	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Ascension	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Australia North	+9.5 H	+14.5 H	+15.5 H	+16.5 H	+17.5 H
Australia South	+10.0 H	+15.0 H	+16.0 H	+17.0 H	+18.0 H
Australia West	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H
Australia East	+10.0 H	+15.0 H	+16.0 H	+17.0 H	+18.0 H
Austria	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Azerbaijan	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Bahamas	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
Bahrain	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Bangladesh	+6.0 H	+11.0 H	+12.0 H	+13.0 H	+14.0 H
Barbados	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Belarus	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Belgium	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Belize	-6.0 H	-1.0 H	+0.0 H	+1.0 H	+2.0 H
Benin	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Bermuda	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Bhutan	+6.0 H	+11.0 H	+12.0 H	+13.0 H	+14.0 H

Country	UTC	Eastern	Central	Mountain	Pacific
Bolivia	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Bosnia Herzegovina	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Botswana	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Brazil East	-3.0 H	+2.0 H	+3.0 H	+4.0 H	+5.0 H
Brazil West	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
British Virgin Islands	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Brunei	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H
Bulgaria	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Burkina Faso	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Burundi	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Cambodia	+7.0 H	+12.0 H	+13.0 H	+14.0 H	+15.0 H
Cameroon	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Canada East	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
Canada Central	-6.0 H	-1.0 H	+0.0 H	+1.0 H	+2.0 H
Canada Mountain	-7.0 H	-2.0 H	-1.0 H	+0.0 H	+1.0 H
Canada West	-8.0 H	-3.0 H	-2.0 H	-1.0 H	+0.0 H
Cape Verde	-1.0 H	+4.0 H	+5.0 H	+6.0 H	+7.0 H
Cayman Islands	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
Central African Rep.	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Chad Republic	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Chile	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
China	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H
Christmas Island	-10.0 H	-5.0 H	-4.0 H	-3.0 H	-2.0 H
Colombia	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
Congo	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Cook Island	-10.0 H	-5.0 H	-4.0 H	-3.0 H	-2.0 H
Costa Rica	-6.0 H	-1.0 H	+0.0 H	+1.0 H	+2.0 H
Croatia	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Cuba	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
Cyprus	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Czech Republic	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Denmark	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Djibouti	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Dominica	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Dominican Republic	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H

Country	UTC	Eastern	Central	Mountain	Pacific
Ecuador	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
Egypt	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
El Salvador	-6.0 H	-1.0 H	+0.0 H	+1.0 H	+2.0 H
Equatorial Guinea	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Eritrea	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Estonia	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Ethiopia	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Falkland Islands	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Fiji Islands	+12.0 H	+17.0 H	+18.0 H	+19.0 H	+20.0 H
Finland	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
France	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
French Antilles	-3.0 H	+2.0 H	+3.0 H	+4.0 H	+5.0 H
French Guinea	-3.0 H	+2.0 H	+3.0 H	+4.0 H	+5.0 H
French Polynesia	-10.0 H	-5.0 H	-4.0 H	-3.0 H	-2.0 H
Gabon Republic	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Gambia	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Georgia	+4.0 H	+9.0 H	+10.0 H	+11.0 H	+12.0 H
Germany	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Ghana	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Gibraltar	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Greece	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Greenland	-3.0 H	+2.0 H	+3.0 H	+4.0 H	+5.0 H
Grenada	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Guadeloupe	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Guam	+10.0 H	+15.0 H	+16.0 H	+17.0 H	+18.0 H
Guatemala	-6.0 H	-1.0 H	+0.0 H	+1.0 H	+2.0 H
Guinea-Bissau	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Guinea	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Guyana	-3.0 H	+2.0 H	+3.0 H	+4.0 H	+5.0 H
Haiti	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
Honduras	-6.0 H	-1.0 H	+0.0 H	+1.0 H	+2.0 H
Hong Kong	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H
Hungary	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Iceland	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
India	+5.5 H	+10.5 H	+11.5 H	+12.5 H	+13.5 H

Country	UTC	Eastern	Central	Mountain	Pacific
Indonesia East	+9.0 H	+14.0 H	+15.0 H	+16.0 H	+17.0 H
Indonesia Central	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H
Indonesia West	+7.0 H	+12.0 H	+13.0 H	+14.0 H	+15.0 H
Iran	+3.5 H	+8.5 H	+9.5 H	+10.5 H	+11.5 H
Iraq	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Ireland	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Israel	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Italy	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Jamaica	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
Japan	+9.0 H	+14.0 H	+15.0 H	+16.0 H	+17.0 H
Kazakhstan	+6.0 H	+11.0 H	+12.0 H	+13.0 H	+14.0 H
Kenya	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Kiribati	+12.0 H	+17.0 H	+18.0 H	+19.0 H	+20.0 H
Korea, North	+9.0 H	+14.0 H	+15.0 H	+16.0 H	+17.0 H
Korea, South	+9.0 H	+14.0 H	+15.0 H	+16.0 H	+17.0 H
Kuwait	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Kyrgyzstan	+5.0 H	+10.0 H	+11.0 H	+12.0 H	+13.0 H
Laos	+7.0 H	+12.0 H	+13.0 H	+14.0 H	+15.0 H
Latvia	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Lebanon	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Lesotho	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Liberia	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Libya	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Liechtenstein	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Lithuania	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Luxembourg	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Macedonia	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Madagascar	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Malawi	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Malaysia	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H
Maldives	+5.0 H	+10.0 H	+11.0 H	+12.0 H	+13.0 H
Mali Republic	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Malta	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Marshall Islands	+12.0 H	+17.0 H	+18.0 H	+19.0 H	+20.0 H
Mauritania	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H

Country	UTC	Eastern	Central	Mountain	Pacific
Mauritius	+4.0 H	+9.0 H	+10.0 H	+11.0 H	+12.0 H
Mayotte	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Mexico East	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
Mexico Central	-6.0 H	-1.0 H	+0.0 H	+1.0 H	+2.0 H
Mexico West	-7.0 H	-2.0 H	-1.0 H	+0.0 H	+1.0 H
Moldova	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Monaco	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Mongolia	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H
Morocco	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Mozambique	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Myanmar (Burma)	+6.5 H	+11.5 H	+12.5 H	+13.5 H	+14.5 H
Namibia	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Nauru	+12.0 H	+17.0 H	+18.0 H	+19.0 H	+20.0 H
Nepal	+5.5 H	+10.5 H	+11.5 H	+12.5 H	+13.5 H
Netherlands	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Netherlands Antilles	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
New Caledonia	+11.0 H	+16.0 H	+17.0 H	+18.0 H	+19.0 H
New Zealand	+12.0 H	+17.0 H	+18.0 H	+19.0 H	+20.0 H
Newfoundland	-3.5 H	+1.5 H	+2.5 H	+3.5 H	+4.5 H
Nicaragua	-6.0 H	-1.0 H	+0.0 H	+1.0 H	+2.0 H
Nigeria	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Niger Republic	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Norfolk Island	+11.5 H	+16.5 H	+17.5 H	+18.5 H	+19.5 H
Norway	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Oman	+4.0 H	+9.0 H	+10.0 H	+11.0 H	+12.0 H
Pakistan	+5.0 H	+10.0 H	+11.0 H	+12.0 H	+13.0 H
Palau	+9.0 H	+14.0 H	+15.0 H	+16.0 H	+17.0 H
Panama, Rep. of	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
Papua New Guinea	+10.0 H	+15.0 H	+16.0 H	+17.0 H	+18.0 H
Paraguay	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Peru	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
Philippines	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H
Poland	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Portugal	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Puerto Rico	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H

Country	UTC	Eastern	Central	Mountain	Pacific
Qatar	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Reunion Island	+4.0 H	+9.0 H	+10.0 H	+11.0 H	+12.0 H
Romania	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Russia West	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Russia Central 1	+4.0 H	+9.0 H	+10.0 H	+11.0 H	+12.0 H
Russia Central 2	+7.0 H	+12.0 H	+13.0 H	+14.0 H	+15.0 H
Russia East	+11.0 H	+16.0 H	+17.0 H	+18.0 H	+19.0 H
Rwanda	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Saba	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Samoa	-11.0 H	-6.0 H	-5.0 H	-4.0 H	-3.0 H
San Marino	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Sao Tome	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Saudi Arabia	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Senegal	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Seychelles Islands	+4.0 H	+9.0 H	+10.0 H	+11.0 H	+12.0 H
Sierra Leone	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Singapore	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H
Slovakia	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Slovenia	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Solomon Islands	+11.0 H	+16.0 H	+17.0 H	+18.0 H	+19.0 H
Somalia	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
South Africa	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Spain	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Sri Lanka	+5.5 H	+10.5 H	+11.5 H	+12.5 H	+13.5 H
St. Lucia	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
St. Maarteen	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
St. Pierre & Miquelon	-3.0 H	+2.0 H	+3.0 H	+4.0 H	+5.0 H
St. Thomas	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
St. Vincent	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Sudan	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Suriname	-3.0 H	+2.0 H	+3.0 H	+4.0 H	+5.0 H
Swaziland	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Sweden	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Switzerland	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Syria	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H

Country	UTC	Eastern	Central	Mountain	Pacific
Taiwan	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H
Tajikistan	+6.0 H	+11.0 H	+12.0 H	+13.0 H	+14.0 H
Tanzania	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Thailand	+7.0 H	+12.0 H	+13.0 H	+14.0 H	+15.0 H
Togo	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Tonga Islands	+13.0 H	+18.0 H	+19.0 H	+20.0 H	+21.0 H
Trinidad and Tobago	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Tunisia	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Turkey	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Turkmenistan	+5.0 H	+10.0 H	+11.0 H	+12.0 H	+13.0 H
Turks and Caicos	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
Tuvalu	+12.0 H	+17.0 H	+18.0 H	+19.0 H	+20.0 H
Uganda	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Ukraine	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
United Arab Emirates	+4.0 H	+9.0 H	+10.0 H	+11.0 H	+12.0 H
United Kingdom	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Uruguay	-3.0 H	+2.0 H	+3.0 H	+4.0 H	+5.0 H
USA Eastern	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
USA Central	-6.0 H	-1.0 H	+0.0 H	+1.0 H	+2.0 H
USA Mountain	-7.0 H	-2.0 H	-1.0 H	+0.0 H	+1.0 H
USA Western	-8.0 H	-3.0 H	-2.0 H	-1.0 H	+0.0 H
USA Alaska	-9.0 H	-4.0 H	-3.0 H	-2.0 H	-1.0 H
USA Hawaii	-10.0 H	-5.0 H	-4.0 H	-3.0 H	-2.0 H
Uzbekistan	+5.0 H	+10.0 H	+11.0 H	+12.0 H	+13.0 H
Vanuatu	+11.0 H	+16.0 H	+17.0 H	+18.0 H	+19.0 H
Vatican City	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Venezuela	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Vietnam	+7.0 H	+12.0 H	+13.0 H	+14.0 H	+15.0 H
Wallis & Futuna Is.	+12.0 H	+17.0 H	+18.0 H	+19.0 H	+20.0 H
Yemen	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Yugoslavia	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Zaire	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Zambia	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Zimbabwe	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H

APPENDIX C: CONVERSION CHARTS

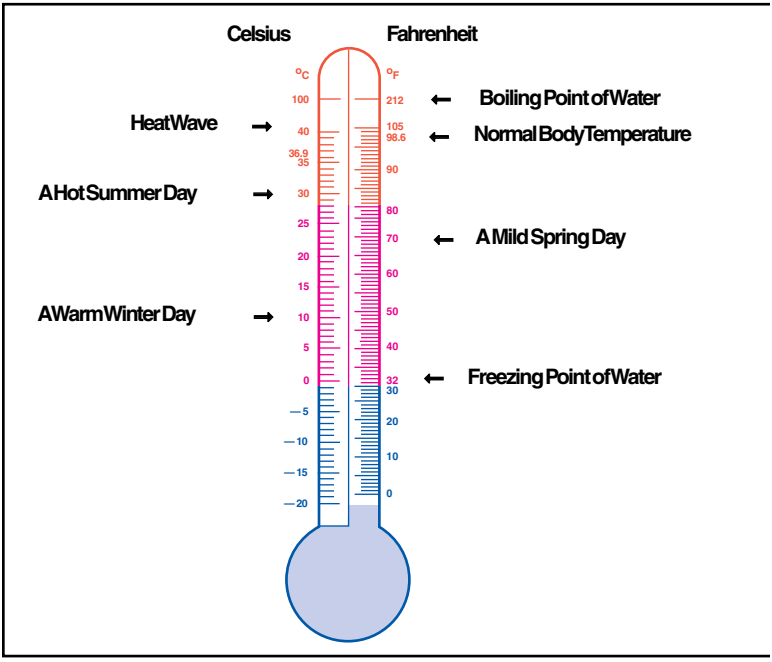
When You Know

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	Kilometers 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

APPENDIX D: HOLIDAYS

National Holidays

23 July	Accession of the Sultan
18 November	National Day
19 November	Sultan's Birthday

Religious Holidays

The following Islamic holidays are based on the lunar calendar; dates vary:

Eid al Fit (End of Ramadan)

Eid al Adha (Feast of the Sacrifice)

Hijri (Islamic New Year)

Ashoura, Mouloud (Prophet's Birthday)

APPENDIX E: LANGUAGE

Arabic

Alphabet

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. Short vowels are generally unwritten, although three markers are used to ensure proper pronunciation. There is no capitalization in Arabic, but each letter has a different form depending on where it falls in the word—at the beginning, middle, end, or standing alone.

Arabic is a Semitic language; its structure and grammar are different from English. Words are formed from three letter roots (root verbs) by changing the vowels (vowel sounds or diacritics) between the consonants, which always begin and end the word. For example, the word for book is *Ketab* and the word for library is *Maktabah*. The root is *K-T-B*.

Key Phrases

English	**Arabic**
Yes.	*aywaa*
No.	*laa*
Please.	*min fadlak*
Welcome!	*aahlaan wa saahlaan*
Thank you.	*shukran*
Hello.	*marhaba*
How are you?	*kayf halak*

English	Arabic
I am fine, thank you.	*kwayyis, shukran*
Good morning.	*sobah al kheir*
Good morning (reply).	*sobah an noor*
Good evening.	*masaa' al kheir*
Good evening (reply).	*masaa' an noor*
Good night.	*laylaa saidaa*
Goodbye.	*maa'a ssaalamaa*
Praise be to God!	*al hamdulillah*
Excuse me.	*afwan*
Where?	*wayn*
When?	*imta*
What?	*shoo or aysh*
How?	*kayf*
How much/many?	*gedeesh*
Who?	*men*
Why?	*laysh*
Which?	*ay*
What is this?	*shoo haada*
This is mine.	*hada lee*
This is not mine.	*hada mish lee*
What does this mean?	*shoo maa'na hada*
Do you speak English?	*ibtahki inta Englizi*
I am an American.	*ana amreeki*
I understand.	*mafhoom*
I don't understand.	*ana mish faahim*
Can you help me?	*momkin tisa'idini*
I'm hungry.	*ana joo'wan*
I'm thirsty.	*ana aatshan*

English	Arabic
I'm tired.	*ana ta'abaan*
I'm lost.	*ana toht*
Hurry!	*bisor'aa or yalla*
No smoking!	*maamnoo' at tadkheen*

Vocabulary

English	Arabic
I	*ana*
You	*inta*
We	*ihna*
Them	*hum*
American Embassy	*sifaara amreekiya*
Arm (body)	*zaraa'*
Bandage	*aasaabe*
Beach	*shawti*
Blanket	*baataniye*
Book	*ketab*
Boots	*boot*
Bridge	*jisr*
Building	*mabna*
Coat	*mi'taf*
Entrance	*dokhool*
Exit	*khorooj*
First Aid Kit	*ilbah is'aafaat awalliiyaa*
Flashlight	*batariiyaa*
Gloves	*jowanti*
Gulf	*khaleej*
Harbor	*mina'*

English	Arabic
Hat	*kobaa'aa*
Head	*ra'as*
Highway	*tareeg*
Hospital	*mostaashfah*
Insect Repellent	*tarid lilhaashaarat*
Knife	*sakeenah*
Leg	*rijil*
Map	*khareeta*
Market	*sooq*
Matches	*kabreet*
Medicine	*dawaa'*
Mosque	*masjid*
Passport	*jewazz as-safar*
Police	*shurta*
Radio	*radyo*
River	*nahr*
Soap	*saboon*
Sea	*bahr*
Seacoast	*sahil al bahr*
Shoes	*hiza'*
Taxi	*taaksi*
Toilet	*twaalet*
Tower	*borj*
Watch	*sa'aah*
Big	*kabeer*
Small	*sagheer*
Fast	*saree'*
Slow	*bati'*

English	Arabic
Early	*mobakir*
Late	*mit'aker*
Near	*kareeb*
Far	*ba'eed*
Hot	*sakhen*
Cold	*bareed*
Heavy	*thageel*
Light	*khafeef*
Open	*maftuuh*
Shut	*ma'fuul*
Right (correct)	*sahh*
Wrong	*ghalat*
Old	*kadeem*
New	*jadeed*

Military Vocabulary

English	Arabic
Aircraft	*ta'ereh*
Aircraft Carrier	*hamleh atta'erat*
Air Defense	*defa' jawi*
Airfield	*mutaar*
Ammunition	*zakheereh*
Amphibious	*bear-ma'i*
Antiair artillery	*maadfa'iyeh modawd atta'erat*
Antilanding Defense	*defa' ded al-aabrar*
Antitank artillery	*maadfa'iyeh modawd al-dababaat*
Army	*jaysh*
Artillery	*maadfa'iyeh*

English	Arabic
Aviation	*teyiran*
Battalion	*kateebeh*
Battleship	*baraajeh*
Bomb	*gunbuleh*
Camouflage	*tamwiyeh*
Cruiser (ship)	*torad*
Chemical Weapon	*salaah kimawi*
Coastal Defense	*defa' saaheli*
Corps	*faylag*
Destroyer (ship)	*modemmoreh*
Division	*firqeh*
Engineer	*mohandess*
Garrison	*hamieh*
Gun	*medfa'*
Handgrenade	*qunbuleh yedawiyeh*
Headquarters	*qiyadeh*
Helicopter	*helicoopter*
Howitzer	*howetzer*
Infantry	*mushaa't*
Latitude	*khatt al-arad*
Longitude	*khatt at-tool*
Machinegun	*reshashah*
Map	*khareetah*
Military	*aaskaaria*
Mine	*lagham*
Minefield	*haql alghaam*
Mortar	*howwen*
Nuclear weapon	*salaah noowawi*

English	Arabic
Platoon	*faseeleh*
Radar	*radar*
Reconnaissance	*'estitlaa'*
Rifle	*bunduqiyeh*
Submachinegun	*reshashah qaseerah*
Tank	*dababeh*
Tactics	*taktik*
Torpedo	*toorbid*
Topography	*toboografia*
Weapon	*salaah*
Weather	at-taqs

APPENDIX F:
INTERNATIONAL ROAD SIGNS

Crossroads

Maximum speed

No through road

Road narrows

Fallen/falling rock

No entry for vehicular traffic

Motorway

Stop and give way

Low flying aircraft or sudden aircraft noise

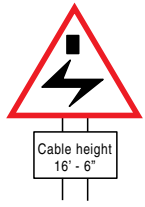
No left turn

One way street

Tourist information point

Traffic signals

No u-turn



Overhead cables, Maximum height

Failure of traffic light signals

Sharp deviation

APPENDIX G:
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 can re-

duce 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 (e.g., 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 before 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
- Cover exposed skin by keeping sleeves rolled down when possible, particularly 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 (reapply after sixth laundering) or 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 (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 rapid 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 (˚F)	Work/ Rest (min.)	Water Intake (Qt/Hr)	Work/ Rest (min.)	Water Intake (Qt/Hr)	Work/ Rest (min.)	Water Intake (Qt/Hr)
1	78 – 81.9	NL	1/2	NL	3/4	40/20	3/4
2	82 – 84.9	NL	1/2	50/10	3/4	30/30	1
3	85 – 87.9	NL	3/4	40/20	3/4	30/30	1
4	88 – 89.9	NL	3/4	30/30	3/4	20/40	1
5	> 90	50/10	1	20/40	1	10/50	1

The work-rest times and fluid replacement volumes in the specific heat category sustain performance and hydration for at least 4 hours. Individual water needs will vary ±¼ quart per hour.

NL = no limit to work time per hour. Rest means minimal physical activity (sitting or standing) and should be accomplished in shade.

Caution: Hourly fluid intake should not exceed 1½ quarts. Daily fluid 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 and other uncooked vegetables, and raw or under cooked 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

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	-65	-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									

- 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
- Seek immediate medical attention for loss of sensitivity in any part of the body

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
- 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 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 Injury

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 kill

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 H:
INDIVIDUAL PROTECTIVE MEASURES

Security Threats

Individual protective measures are the conscious actions that people take to guard themselves against physical harm. These measures can involve simple acts such as locking the car and avoiding high-crime areas. 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 one's vulnerability to the security threats overseas (foreign intelligence, security services, and terrorist organizations). If detained or taken hostage, following the measures listed in these checklists may influence or improve one's treatment.

Foreign Intelligence and Security Services

- Avoid illegal, improper, or indiscreet actions or activities.
- Guard conversation and keep sensitive papers in custody.
- Take for granted that you are under surveillance by both technical and physical means, including:
  - Communications monitoring (telephone, e-mail, cell phones, mail, etc.)
  - 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 U.S. personnel 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 religious literature for distribution. (You may bring one Bible, or Qu'ran, or other such material for 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, terrorist, or 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 particularly 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, U.S. personnel 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, vul-

nerability, 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, tattoos, 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 particularly important when choosing and checking into a hotel and during your residence there.

The recent experiences with airport bombings and airplane hijackings suggest some simple precautions:

- You should not travel in uniform outside the continental U.S. on commercial aircraft.
- Before traveling by commercial aircraft, you should screen your wallet and other personal items, removing any documents that could reveal military affili-

ation (e.g., credit cards and club membership cards). Note that USMC policy requires service members to wear two I.D. tags with metal necklaces while on official business. In addition, service members must carry a current I.D. card at all times. These requirements are valid even while traveling to or through terrorist areas. In view of these requirements, service members must be prepared to remove and conceal these and any other items that could identify them as military personnel in the event of a hijacking.

- 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 this 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 your profile, the less likely you are of becoming a victim or bargaining chip for the terrorists, and the better your chances of survival.

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 and alertness, and introducing order into each day of captivity can 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; therefore, take measures to protect yourself during such an action. Drop to the floor immediately, remain still and avoid 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 I:
DANGEROUS PLANTS AND ANIMALS

Snakes

Puff Adder

Description:
Adult length usually 0.6 to 1 meter (2-3 feet), maximum of 1.5 meters (5 feet); thick, heavily built snake. Background color varies from bright to light yellow, yellow-brown, orange-brown, light brown, or gray. Belly yellowish white to gray with black blotches. Rough-scaled appearance and alternating pattern of dark and light chevron-shaped markings.

Habitat:
Most widely distributed venomous snake in Africa; encountered almost anywhere, at both low and high elevations, except in rain forests and extreme desert conditions.

Activity and behavioral patterns:
Both diurnal and nocturnal; known to bask in early mornings or late afternoons. Comparatively slow-moving and sluggish; relies on immobility and camouflage to escape detection. Bad tempered and excitable; when disturbed, makes long deep hissing noise and may lash out viciously.

Venom's effects:
Many serious bites reported; only a small portion prove fatal. Venom is potent cytotoxin, attacking tissue and blood cells.

Symptoms include extreme pain with swelling and large blisters in region of the bite.

Gasperetti's Horned Desert Viper

No Photograph Available

Description:

Adult length usually 0.3 to 0.6 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.

Burton's Carpet Viper

Description:

Adult length usually 0.5 to 0.7 meter; moderately slender. Background color generally yellowish gray, light brownish gray, or pale blue gray, with gray to tan or bright reddish or pink-

ish, dark-edged blotches on the back. Belly white, grayish white, yellowish white, or pale pinkish brown, stripped with dark gray.

Habitat:
Can exist in extreme desert conditions but prefers firm, rocky ground and avoids loose sand. Found at elevations up to 1,500 meters.

Activity and behavioral patterns:
Primarily nocturnal in hot weather; may be active at dusk. Sometimes diurnal in cool weather. Often most active after rains or on humid nights. May bask during early morning in bushes more than 2 meters above ground. Basks in open during cooler weather, but more frequently found under rocks or among dead plant stalks. When confronted, quickly assumes figure-eight coil, rubbing inflated loops of body together to make distinctive noise similar to sawing wood. Will strike without provocation.

Venom's effects:
Venom highly toxic to man; reports of biting incidents common. Venom primarily hemotoxic; causes internal and external hemorrhaging. Bite causes pain and swelling at site.

Egyptian Carpet Viper

Description:
Adult length usually 0.3 to 0.6 meter (1-1.5 feet); relatively stout snake. Background color variable, usually yellowish, brown, gray, or reddish; may have a series of oblique pale cross-bars, interspersed with dark spaces along back. Usually has rows of triangular or circular markings with pale or white edging along each side. Some specimens with faded or barely visible markings. Belly pale, usually with brown or reddish spots. Head pear-shaped.

Habitat:
Found in oases, semi-desert, dry savanna, and rocky areas. Not found in extensive areas of soft sand or in true desert.

Activity and behavioral patterns:
Terrestrial, although occasionally climbs into low bushes to avoid hot or wet surfaces. Moves quickly. Primarily nocturnal. Hides in holes, under logs, rocks, and brush piles during day; may partially bury itself in sand or coil in or around grass tufts. When confronted, quickly assumes figure-eight coil, rubbing inflated loops of body together to make a distinctive noise similar to sawing wood. If further agitated, will strike continuously and vigorously; may even move toward an aggressor.

Venom's effects:
Major source of snakebites and fatalities in region; venom highly toxic to man. Symptoms include local pain, swelling, blistering, abdominal pain, vomiting, hematuria, bleeding from gums, and fever. Lasting pain and renal failure reported.

Egyptian Cobra

Description:
Adult length usually 1.5 to 2 meters (5-6.5 feet), maximum of 3 meters (10 feet). Background color usually yellow-gray to brown or blue-black, but extremely variable. Belly yellowish with dark blotches. Most specimens have dark brown or black band across the throat.

Habitat:
Various habitats include flat land, scrubby bushes, grass clumps, irrigated fields, rocky hillsides, old ruins, and in vicinity of vil-

lages. Sea level to 1,600 meters (5,250 feet) elevation. Not found in rain forests or extreme desert conditions.

Activity and behavioral patterns:

Nocturnal; emerges at dusk, but often seen basking in sun near its retreat in early morning. Often occupies abandoned rodent burrows or termite mounds. While not overtly aggressive, when molested, will rear and spread an impressive hood up to 12 centimeters (4.7 inches) across.

Venom's effects:

Venom primarily neurotoxic, acting largely on nerves controlling respiratory muscles. Untreated cases may culminate in respiratory failure and death.

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:

Very adaptable. Found 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 blotches or 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 a few local symptoms such as minor pain, mild tingling of the local area, stiffness; more serious bite causes weakness followed by ptosis. Victim may be conscious, but be unable to respond due to paralysis.

Dangerous Invertebrates

Scorpions

Although scorpions in the region are capable of inflicting a painful sting, none are known to be life-threatening.

Spiders

Although there are several spider species found in the region that are capable of inflicting a painful bite, including some very large and physically imposing tarantulas, 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 centimeters long) secrete a very noxious fluid that can cause severe blistering upon contact; some can squirt this fluid at least 2 feet.

Centipedes

Although area centipedes are capable of inflicting a painful bite, none are known to be life-threatening.

Insects

There is little specific information of medical importance regarding insects. However, nearly all countries have at least one species of moth having venomous/urticating hairs and/or whose larva (caterpillar) has venomous spines. Some caterpillars are very

hairy (such as puss moths and flannel moths) and almost unrecognizable as caterpillars, with long silky hairs completely covering the shorter venomous spines. Others bear prominent clumps of still, venomous spines on an otherwise smooth body. 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 will blister skin on contact. The lesions take about a week to heal and the area remains painful for several weeks. The substance is extremely irritating if it gets into the eyes; temporary blindness has been reported.

Dangerous Plants

Velvet Bean

Other names:
Cowitch, cowhage, pica-pica, ox eye bean, horse-eye bean.

Mechanisms of toxicity:
Many of the species' pods and flowers are covered with irritant hairs (proteolytic enzymes). Can be dangerous if they become embedded in the eye. Beans tend to be foul tasting, even after thorough boiling, so little danger of ingestion exists.

Comments:
Many species are widely naturalized.

Modikka

No Photograph Available

Mechanisms of toxicity:

The root is reported to contain prussic acid and a cyanogenic glycoside, which is destroyed by drying. It also contains a toxalbumin called modeccin, which is a protein-synthesis inhibitor. The usual poisoning scenario is that of the root being mistaken for an edible tuber, particularly in situations of scarce food. Death has occurred after ingestion of the fruit. Symptoms within one day are mainly due to the hydrocyanic acid; the toxalbumin results in illness a few days later. Used in India as a "worming" medicine; sap is very irritating. Has been used in Africa to murder.

Comments:

Some species have been used in Africa as medicinals (e.g., for malaria and leprosy).

Desert Rose

Other names:

Monkey poison, mock azalea, impala lily.

Mechanisms of toxicity:

Cardiac glycosides; used for ordeals, arrow poison, and as a fish stupifier.

Comments:

Five species; shrubs or trees; tropical and subtropical African and Arabian distribution. Thrive best in dry areas; have thick stems.

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:

A large genus of worldwide distribution (250 tropical and temperate trees and shrubs).

English Yew

Other names:
Groundhemlock, 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 expeditiously. 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."

Panama Tree

Other names:
Castano, tartargum.

Mechanisms of toxicity:
Seeds are edible, but pods have internal stiff bristles that easily penetrate skin, causing intense irritation.

Comments:
There are 200 tropical species.

APPENDIX J:
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

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