## Mauritania Country Handbook

1. This handbook provides basic reference information on Mauritania, 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 Mauritania.

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

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Mauritania

# **KEY FACTS**

#### Country Name. Mauritania

Conventional Long Form. Islamic Republic of Mauritania Local short form. Muritaniyah Local long form. Al Jumhuriyah al Islamiyah al Muritaniyah

**Flag.** Green background with a yellow five-pointed star above a horizontal crescent; the closed side of the crescent is down; the crescent, star, and green color are traditional symbols of Islam.

Head of State. President Maaouya Ould Sid Ahmed Taya

Capital. Nouakchott

Time Zone. Mauritania's time zone is UTC (formerly GMT)

Population. 2,828,858 (July 2002)

Languages. Since 1968, Mauritania's official language has been Hassaniyya Arabic, spoken mainly by the Moors. French is also spoken. Other main languages include Azayr, Fulfulde, Mande-kan, Pulaar, Soninke, and Wolof. All the languages have similarities, and most are rooted in the Niger-Congo language family.



**Currency.** Mauritanian ouguiya (UM) = 5khoums; US1= UM263 (February 2003). Notes are in denominations of UM1000, 500, 200, 100, 50, 10, and 5. Coins are in denominations of UM20, 10, 5, and 1, and 1 and 0.2 khoums.

## **U.S. MISSION**

#### U.S. Embassy

Location	Rue Abdallaye, Nouakchott
Mailing Address	BP 222, Nouakchott
Phone	[222] 525-2660, 525-2663
Fax	[222] 525-1592

#### **Travel Advisories**

Although U.S. citizens are generally welcome in Mauritania, there were reports of anti-American incidents (threats and stoning of vehicles) following the 1998 U.S.- and British-led air attacks against Iraq. There have been small-scale (6,000-8,000 people, primarily youths), non-violent demonstrations in Nouakchott in response to the 2003 war in Iraq. Mauritanian security forces were able to control the crowds, and kept them at least 200 meters from the U.S. Embassy compound. Some Muslim extremists perceived Christian non-governmental organizations as a threat. Political violence and religious extremist groups have not posed a direct threat to U.S. interests in Mauritania.

As a result of a past border conflict between Morocco and Western Sahara, unexploded landmines near the border are a potential danger. In addition, tourists have been held up and robbed along the borders with Western Sahara and Algeria. Surface travel between Mali and Mauritania can be dangerous, due to banditry in the border region. In 1999, 13 Mauritanians and Malians were killed in a bor-



#### U.S. Embassy

der clash, prompting the establishment of a Mauritanian-Malian-Senegalese police coordination force to provide greater border security. Groups traveling to Moroccan, Algerian, or Malian borders should check with the U.S. Embassy in Nouakchott and/or local authorities to leave their itineraries and check the condition along the planned trip routes.

#### **Entry Requirements**

#### Passport/Visa Requirements

Passports are required by all foreign nationals except for those nationals of ECOWAS countries (Benin, Burkina Faso, Cape Verde, Cote d'Ivoire, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo) who hold valid national identification cards.

Visa prices vary by country, and multiple-entry visas are generally not available. The standard visa is valid for 3 months and good for a stay of up to 3 months from the date of entry. Visas are required by everyone except for those of the following categories who plan to stay less than 3 months: French and Italian nationals (all other EU nationals do need a visa); nationals of ECOWAS countries; and nationals of Algeria, Central African Republic, Madagascar, and Romania. Transit passengers continuing their journey by the same or first connecting aircraft do not require visas, provided they hold onward or return documentation and do not leave the airport.

#### Immunization Requirements

Visitors coming from an infected area may be required to provide proof of vaccination against cholera or yellow fever.

#### **Customs Restrictions**

It is illegal to bring alcohol into the country. Despite this, some hotels do serve alcohol. Local currency cannot be imported or exported.

# **GEOGRAPHY AND CLIMATE**

## Geography

Mauritania is located in northwest Africa along the Atlantic coast. With a total land area of 1,030,400 square kilometers (397,950 square miles), Mauritania is about the size of Texas and New Mexico combined.



#### Africa

## **Boundaries**

Mauritania's boundaries consist of the Atlantic Ocean to the west; the Western Sahara to the northwest; Algeria in the north; Mali along the eastern border; and Mali and Senegal to the south. The southern border between Mauritania and Senegal is along the Senegal River.

Sandy shores border nearly all of the southern half of Mauritania's coastal area. The northern half of the coastline is formed partly by rocky and/or sandy beaches and partly by cliffs. Rocky beaches have formed in regions where erosion by the sea causes landslides and large rocks to fall to the bases of cliffs. Heavy surf eventually breaks down this debris leaving narrow sandy beaches fronting the cliffs.

## Topography

The vast Sahara Desert makes up the northern two-thirds of Mauritania and is characterized by sand dunes and rugged plateaus that reach 457 meters (1,500 feet) above sea level. The Senegal River Valley, in the extreme southwest, is a 15- to 30-kilometer- (10 to 20 mile-) wide belt of rich, well watered, alluvial soil. The Sahel is a broad east-west steppe



View of Coastline from Old Port in Nouakchott



#### Topography and Drainage

that extends from the valley to north of Nouakchott. The 20- to 40-kilometer- (12 to 25 mile-) wide coastal belt extends the length of the Atlantic coast in an arc from Cape Blanc to the Senegal River. The coastal area forms the western edge of the Sahara Desert and is characterized as one of the chief desert coasts of the world. Throughout the area the coastal plain is wide, averaging about 322 kilometers (200 miles) in Mauritania and northern Senegal, and gradually decreases in width to the north in Western Sahara. In the vicinity of the Senegal River, where the generally flat terrain is subject to annual flooding, the coastal plain is fertile and cultivated. The majority of the coastal plain is covered by extensive dunes that range from 3 to 32 kilometers- (2 to 20 miles-) wide, usually oriented in a northeast-southwest direction. The dunes in the southern part of the desert are shrub-covered and stationary; in the north they are barren and constantly shifting.

The Senegal River, which forms the boundary between Mauritania and Senegal, is the only permanent river in this area, and is one of the most significant rivers in northwest Africa. From its source in Guinea, it flows north and west, 2,500 kilometers (1,553 miles), reaching the Atlantic Ocean at Saint Louis, Senegal. From its mouth, the river is navigable for over 874 kilometers, as far as Kayes, Mali, during the rainy season (July - September), and to Podor, Senegal during the rest of the year. Heavy rains during the rainy season bring annual floods.



Pirogue Crossing Senegal River at Rosso

The Senegal River delta is bordered by 74 kilometers (46 miles) of sandy coast north of the river mouth, and consists of marshy islands separated by a network of mangrove-lined tributaries and channels. From its entrance, the river parallels the coast for 31.5 kilometers (20 miles) to the north, and is separated from the sea by a narrow sand spit, Langue de Barbarie. This sand spit gradually widens and rises in elevation toward the north. In the lower main course of the river, local winds form small, evenly spaced sand spits along the shores. The city of St. Louis is located partially on Langue de Barbarie and partially on islands in the river, 22 kilometers (14 miles) north of the river entrance. The Senegal River valley covers a zone 16 to 32 kilometers- (10 to 20 miles-) wide south and north of the river. During the rainy season the river floods the surrounding valley filling numerous lakes and sebkhas (a term used to describe a flat area, not necessarily in a depression, usually forming swamps or lakes during the rainy season and dry salt pans during the dry season). Following the rainy season the flooded regions drain through a network of channels back into the river, and the land is cultivated.

#### **Adrar Region**

The Adrar region in western Mauritania is a massif of pink and brown plateaus with dunes and deep canyons sheltering palm groves. It lies in the north central part of the country, and begins about 320 kilometers (200 miles) northeast of Nouakchott.

Russian researchers using space-related technology have found a powerful underground river some 250 meters (820 feet) below the arid rocky desert of the Adrar plateau. The water flow, tested through borehole drilling at 32,000 liters per hour, is heavy enough to supply the 50,000 inhabitants of the nearby town of Atar. This could sufficiently augment the water sources used to sustain the scattering of palm groves and garden plots that fringe the town – and help to maintain Adrar's viability as a local trading hub and center for tourist excursions to such places as the historic Islamic town of Chinguetti, 120 kilometers (75 miles) away.



Canyons of the Adrar Region

Atar, the capital of the Adrar region, is an oasis lying on a salt caravan route. It is the market center for the nomads of northern Mauritania and has an old quarter, the *Ksar*, with flat-roofed houses and a palm grove.

The oasis of Azoughui was the capital of the Almoravid empire during the 11th and 12th centuries, and remains of fortified buildings from that era still exist. A popular day excursion from Atar leads over the mountain pass of Homogjar to Chinguetti. Founded in the 13th century, Chinguetti is a holy city of Islam that has a medieval mosque and a library housing ancient manuscripts.

## Climate

Most of the country is hot and dry and receives practically no rain. The south, however, experiences a rainy season from July to September. The

coast is tempered by trade winds and is mild with the exception of the hot Nouakchott region (where the rainy season begins a month later). Deserts are cooler and windy in March and April.

Mauritania has four climatic zones. The Sahara Desert region typically receives 25 to 125 millimeters (1 to 5 inches) of rain during the rainy season. During winter (December through April), the mean daily minimum temperature is  $0^{\circ}$  C ( $32^{\circ}$ F) and the mean daily maximum is  $38^{\circ}$ C ( $100^{\circ}$ F). In contrast, summer (May through October) has a mean daily maximum temperature of  $49^{\circ}$ C ( $120^{\circ}$  F) and a mean daily minimum of  $16^{\circ}$ C ( $60^{\circ}$ F). Desert conditions are intensified by hot, dry, blinding sandstorms, which occur primarily in March and April.

The Senegal River Valley zone has the highest rainfall in the country, with up to 660 millimeters (26 inches) of rain per year, beginning in May and lasting through September. The mean daily maximum temperature is  $34^{\circ}$ C ( $94^{\circ}$  F), while the mean daily minimum drops to approximately  $23^{\circ}$ C ( $74^{\circ}$ F).

The Sahelian zone has a rainy season from July through October, producing an average annual rainfall of approximately 460 millimeters (18 inches). Temperature extremes are less severe than in the Sahara.

The coastal zone has a humid but temperate climate modified by the trade winds. Annual rainfall usually is less than 25 millimeters (1 inch). The mean daily maximum temperature is approximately 31°C (90°F), while the mean daily minimum temperature is approximately 20°C (68°F). Severe cyclones can occur from September through April.

Throughout this area the trade winds blow steadily from a northerly direction, usually parallel to the coast, with speeds predominately between 7 and 17 knots. The trade wind belt migrates seasonally, reaching its southernmost limit (approximately 10 degrees north) during winter. It moves north during spring, and in summer the southern boundary of the belt is at its northern most limit (approximately 20 degrees north). Nouakchott also has been hit by dust storms for up to 9 months. Harmattan winds (northeasterly surface winds that blow throughout the dry season, November - April) often cause blinding sandstorms due to dust and



Bir Moghrein/Kaedi Weather



Nema/Nouakchott Weather

haze carried from the Sahara. Fog, not as frequent as the harmattan, is more common along the coast. The strengthening of the sea breeze and temperature contrast between the land and water help increase occurrences of fog along the coast. The northern coast, with no terrain blocking features, has a higher frequency of fog than the southern coast. Most fog develops around sunset and lasts until mid-morning. Thunderstorms occur approximately 1 day a month throughout the Mauritania region.

In January 2002, southern Mauritania was subjected to 3 days of severe rain, wind, and cold. Between the Trarza and Brakna regions in south-western Mauritania, 30 people were killed; 10,000 left homeless; 1,500 homes were destroyed; and 115,000 animals were killed. Additionally, there were significant losses to standing crops and pasturage. Much of the region's cereal harvest and hay crops were lost.

#### Environment

There is widespread desertification in Mauritania, made worse by overgrazing, deforestation, and soil erosion.



**Desert Landscape - Shifting Dunes** 

Battering surf and shifting sandbanks characterize the entire length of the shoreline. The breaker zone lies between the 15 meter- (50 foot-) depth contour and the shore. Breakers approach the coast primarily from the north and northwest; however, breakers from the west through southwest also occur. Breakers in this area usually are associated with swell from distant storms and may occur regardless of local weather conditions. Spilling-type breakers dominate, with plunging-type occurring to a lesser extent; surging-type breakers are minimal.

#### Cross Country Movement

Mauritania's infrastructure cannot support the transportation and logistical requirements of large-scale, sustained operations of any duration.

The lack of roads connecting the ports at Nouakchott and Nouadhibou to the northeast makes airlift the only means of transportation. Only one road joins Nouakchott with Nema across southeastern Mauritania, and its interdiction would leave few feeder roads in the southern third of the country. Sustained operations in the south would also depend on airlift



Cross Country Travel via Four-Wheel Drive

capability. In the central regions, the lack of airfields and the presence of only trace roads or trails leave four-wheel-drive vehicles the only means of accomplishing force deployment and logistics operations.

# TRANSPORTATION AND COMMUNICATION

#### Transportation

#### Roads

Mauritania has 1,685 kilometers (1,047 miles) of paved highways, and 1,040 kilometers (646 miles) of roads with crushed stone and gravel surfaces. Main roads run north to south and were developed for mineral exploitation. The country's main highway is the Route de Mauritanie, which runs the length of the country, along the Western Sahara land border and the coast.

The most reliable route into Mauritania overland is from Senegal. From Dakar, the journey to Nouakchott is 8-10 hours along a 575 kilometer (360 mile) tarred road. The River Senegal must be crossed by ferry at Rosso. The ferry service operates from 0730-1200 and 1500-1800 daily.



Ferry Crossing at Rosso



Transportation Network

A new, Japan-financed road enables travel from Nouakchott to Atar in 6 hours. The road from Atar to Choum and Chinguetti (both 3 hours) is in reasonably good condition and does not require four-wheel drive. Gas is

usually available in both towns but can be expensive if there is a shortage. Travelers can also drive to Ouadane without four-wheel drive along the northern plateau road, but not via the sandy southern route from Chinguetti. Four-wheel drive is also required around Tidjikja.

The overland trip from Nouakchott to Nouadhibou (525 kilometers/ 326 miles) takes 2-3 days and requires four-wheel drive. This route is far worse than any other section of the trans-Saharan route through Morocco and Mauritania. The first 155 kilometers (96 miles) from Nouakchott north to Cap Timiris runs along the beach and is passable only during low tide, making a breakdown potentially disastrous. The road beyond Cap Timiris is hampered by drifting dunes for almost 300 kilometers (186 miles). For safety reasons, at least two vehicles are recommended for the trip; using one as a guide.

Construction of a new 470-kilometer (292-mile) road along the Atlantic coast has begun. The new US\$70 million highway, financed by the Arab Fund for Economic and Social Development and the Islamic Development Bank, is part of a planned, all-weather route from Europe, through Morocco and the Western Sahara, to West Africa. The road will have an immediate practical impact on Mauritania, linking Nouakchott and the northwestern city and fishing port of Nouadhibou that previously required a 24- to 36-hour trip over sand tracks. The new road will stimulate local traffic and improve access between isolated local fishing communities and the markets in Nouakchott. Once it is open, the road's success will depend on the government's ability to maintain it.

In July 1999, an agreement was reached between the OPEC Fund for International Development and Mauritania to finance US\$4 million for a 125 kilometer- (78 mile-) stretch of road from Aioun El Atrouss to Gogui, on the Malian border. Additionally, the OPEC Fund plans to co-support a 72 kilometer (45 mile) road extending from Hassi to Gogui. These new roads are expected to improve trade with Mali. From the airport in Nouakchott, taxis accept U.S. dollars and French francs. The standard fare from the airport to the city center is between UM600 and UM700 (US\$2 and US\$3), but at night drivers usually demand more.

Taxis are easy to find along Abdel Nasser and Kennedy Avenues, especially in the market area. Passengers must specify whether they want a course or route taxi. Route taxis operate like buses, with ride sharing and specified routes, most of which start at the market stand. Fares are UM25 to UM35 (US\$0.10 to US\$0.15).

A course taxi offers a private ride to an exact destination and costs UM250 (US\$1) around town, including the airport, or UM500 to UM600 (US\$1.90 to US\$2) by the hour (negotiable). Taxis do not have meters, but drivers are fairly honest about fares.

Yellow and green minibuses run throughout the city. Fares range from UM25 to UM35 (US\$0.10 to US\$0.15). In the city center, minibuses can be found on Kennedy Avenue next to the Grand Marche.



Taxis in Nouakchott



**Typical Loaded Minibus** 

#### Rail

Mauritanian National Railways (TFM-SNIM) exists mainly to serve the state-owned mining company, Societe Nationale Industrielle et Minere. The TFM-SNIM rail fleet consists of 31 diesel locomotives, 8 shunting locomotives, 1,200 freight wagons, and 8 passenger cars.

The Nouadhibou-Zouerat train is the world's longest train (typically 2.3 kilometers/1.5 miles long). It is an iron-ore train with no passenger terminals. However, for people traveling between these two towns, it has become a passenger train for lack of alternatives. The trip takes 16 to 18 hours, but most travelers get off at Choum, 12 hours from Nouadhibou. The train randomly stops to let people off. The dilapidated passenger carriage at the rear has no lights or porters, and the seats consist of long



#### Iron-Ore Train

benches on either side. There are compartments with fold-down bunks at either end, but getting one is difficult. The carriage is usually crowded, but as the journey progresses and people get off, space becomes available. In the late afternoon, many men find space on the floor to pray and at dusk, when the cabin becomes dark, chanting begins. A *houli*, or man's headwrap, is useful for keeping sand and soot out of the eyes, and passengers bring extra clothes to keep warm, as it gets very cold at night.

The railroad's ore hopper cars cannot be used to move most military cargo, general cargo, or containers. They transport small troop units and basic equipment to northeastern Mauritania. In event of a military operation, heavy equipment and large volumes of supplies would have to be transported by road or air.

#### Air

Mauritania has international airports in Nouakchott, Nouadhibou, and Nema. The country has 30 smaller airports for internal domestic flights.

Airlift capability is restricted, as there is a lack of cargo-handling equipment and airfield clearance capacities, and inadequate accommodations for large transport aircraft. In addition, the airfields are unevenly distributed in the southern and northern areas of the country.

Air France has flights twice weekly to and from Paris. From Nouakchott, regular fares (UM75,250 or US\$580 one way, economy class) are half the price of tickets purchased in France.

Flights operate between Nouakchott and Dakar, Senegal on weekdays on Air Mauritanie, and Air France. There are also flights twice a week to and from Bamako, Mali on Air Mauritanie; to and from Banjul, The Gambia on Air Gambia and Air Mauritanie; and to and from Abidjan, Cote d'Ivoire on Air France. There are weekly flights to and from Algiers, Algeria on Air Algerie and to and from Tunis, Tunisia on Tunis Air.

Air Mauritanie, considered one of the better airlines in West Africa, flies twice daily from Nouakchott to Nouadhibou, and less frequently to Atar, Nema, Zouerat, Tidjikja, Kaedi, Kiffa, and Ayoun-el-Atrous. Airline departures are rarely on time, and the cleanliness of the aircraft cabin may be less than ideal. Mauritanian pilots can be aggressive in their maneuvering of the aircraft and do not make gradual turns and altitude adjustments.

#### Maritime

Mauritania's principal port is in Nouadhibou. There is also a small port at Nouakchott. St. Louis, in northern Senegal, also serves Mauritania. Mauritania's ports do not have the cargo-handling equipment needed to accommodate large military cargo vessels. All ships must be self-sustaining. The only port with adequate alongside depths and storage area is the Port de L'amitie at Nouakchott. The port's capacity was expanded to 950,000 tons in 1986 with the completion of a 500,000-ton deepwater facility (financed and constructed by the People's Republic of China). However, heavy swells and strong undertows may be encountered within the port, and several dangers, including wrecks and other obstructions, lie within 3 kilometers of the pier to the south and southwest. The onset of bad weather should be carefully observed, since the coast offers no shelter. It is recommended that vessels be kept ready to head to open sea at any time, as the port is often subject to sudden development of bad weather.

The iron ore port of Point-Central, 10 kilometers (6 miles) to the south of Nouadhibou, can accommodate 150,000-ton bulk carriers. A 740-kilometer (460-mile) rail line links the port with iron ore deposits at Zouerat, the El Rhein deposit, and M'Haoudat.

#### Communication

The broadcast media are state-owned. Their coverage is strongly in favor of the government, and opposition access to radio broadcasting is limited. Citizens can receive foreign television broadcasts, including programming from France and Arabic countries. Cellular phone communication systems are gradually becoming more prominent, as is the case throughout most of West Africa.

#### Radio and Television

Office de Radiodiffusion-Television de Mauritanie (ORTM) is the national broadcaster. It broadcasts on FM and short wave in Arabic, French and other local languages, and is also available on the Arabsat 2B satellite, which broadcasts news, sports, and cultural programs.

Radio France Internationale is relayed on FM from Nouakchott. The Gabon-based, Africa No 1 radio has permission to broadcast on FM. Mauritanian TV broadcasts in Arabic, French and other local languages. It has only one channel, which can be received via satellite in 11 regional capitals. There are also current American TV shows broadcast in English with Arabic subtitles.

#### Telephone and Telegraph

A recently completed domestic satellite telecommunications system links Nouakchott with regional capitals. International calls and faxes may be sent/received at many post and telephone centers, but the many privately run phone shops located in the major cities and towns are usually more convenient. Most of these shops are open late. The cost is about UM450/US\$3 per minute to the United States or Europe and less for calls within West Africa. Telephone area codes within Mauritania are as follows: Nouakchott -2; Rosso -5; Nouadhibou, Atar, and Zouerat -7. The international dialing code for Mauritania is +222.

In 2001, there were 35,000 cell phone users in Mauritania. Recent upgrades have been made to the country's cell phone system, and coverage is said to be good in most parts of the country.

By the end of 2001, there were five internet service providers and approximately 7,500 Internet users in Mauritania. Internet cafes can be found in Nouakchott, especially in the hotels.

## Newspapers and Magazines

Since 1992, local printed media production has increased tremendously. Some newspapers are critical of the government. Newspapers must register with the Interior Ministry and submit copies to the Justice and Interior Ministries for censorship. Material that insults Islam or is perceived to threaten national security may be censored. Major French and Arabic publications include: *Al-Sha'b* (Arabic); *Horizon* (French); *Journal Officiel* (French-language official gazette); *Le Calame* (Arabic and French); *L'Eveil-Hebdo* (French); *Rajoul Echaree* (in Arabic and French); and *Nouakchott Info* (in French). Copies of *Le Monde, Newsweek*, and the *Herald Tribune* are also available.

## Postal Service

In Nouakchott, the post office is located on Abdel Nasser Avenue. Post offices are open from 0800 to 1200, and 1500 to 1800, and are usually closed Fridays and Saturdays. However, the post office in Nouakchott is open every day. Letters sent from Mauritania to Europe take about a week to arrive.

## Satellites

One Atlantic Ocean INTELSAT and two ARABSAT satellite earth stations provide communication with other countries. Mauritania is exploring the implementation of a new domestic television satellite system with Kuwait and France.

# CULTURE

## Society

Intermittent droughts have forced a large percentage of Mauritania's rural population to abandon its traditional nomadic way of life and move to the larger towns and cities. The urban areas are unable to cope economically or structurally with this influx. This has resulted in insufficient health and sanitation facilities, a reduction in agricultural productivity, and high unemployment.

## People

Ethnic groups in Mauritania include Arab-Berber (White Moor or Bidan), Arab-Berber-Negroid (Black Moor or Haritine), Haalpulaar, Soninke, and Wolof. The Moors have one of the most stratified caste systems in Africa. The system is based on lineage, occupation, and access to power. This division hampers any attempt to unify the people. Skin color has become a common, although inaccurate, measure used to determine status.

The top social stratum is the typically light-skinned Bidan Moors, descended from warriors. Below them are commoners, mostly of Berber-Negroid descent. The lowest castes traditionally consist of four groups: the Haratin Moors, artisans, griots, and slaves, who have no rights of any kind.

The Haratin are generally employed to perform house and field work and tend to be, therefore, lean in physical stature. Bidan women tend to be slightly overweight because it is considered beautiful.

The Moors were nomads who made a living raising cattle and sheep, and from commerce, particularly transport with camel caravans. For many, this ended during the severe droughts of the 1970s and early 80s when most of their animals died. Many Moors were forced to give up their



#### **Camel Transporting Goods**

nomadic existence and move to Nouakchott, where they lived in shanty-towns. Today, most are city-based traders.

Mauritanian men characteristically have Arab facial features and wear long light-blue African robes. Many have the name Ould (son of), for example, Ahmed Ould Mohamed. For women it is Mint (daughter of). Although women are at a disadvantage due to their low literacy rate, culturally they have more freedoms than women in many Arabic countries. For example, while Mauritanian women cover their heads, they are not required to cover their faces.

## Family

Mauritania's traditional social unit is the family and its lineage. A family's lineage is traced back five or six generations. The lineage serves as a basis

of socialization for the young, with elder members of the lineage guiding younger members to conform to social norms. A group of related lineage that maintain social ties is known as a clan. The smallest unit within the clan is the extended family, consisting of a group of related males, with their wives, sons, and unmarried daughters. Marriage within the clan is preferred. First cousins are the traditional marriage partners.

Every Mauritanian is expected to marry and have children. A wedding ceremony consists of an 'aqd, which is the actual Islamic contractual commitment in which the bride and groom pledge themselves to the marriage. The 'aqd is followed by a party. The next step in the wedding is the *marwah* party, which is a reception to see the bride off to her new family. The *marwah* is bigger, noisier, and has more entertainment and dancing than the 'aqd.

Thin girls are not considered attractive in Mauritanian society, and preteen girls are encouraged to eat well and drink lots of milk in order to ensure their physical beauty. Years ago, girls became engaged or married by the time they were 8-10 years of age. However, today, many girls wait until they graduate from high school or college. Mauritanian men are permitted to marry more than one wife; however, most do not. Many Mauritanian men will marry in succession, divorcing one wife and then marrying a second.



Upscale Home in Nouakchott



#### Handcrafts Market

## Languages

Since 1968, Mauritania's official language has been Hassaniyya Arabic, spoken mainly by the Moors. French is also spoken. Other main languages include Azayr, Fulfulde, Mande-kan, Pulaar, Soninke, and Wolof. All the languages have similarities, and most are rooted in the Niger-Congo language family. The study of Hassaniyya in secondary schools was made compulsory in 1966. Hassaniyya is a largely Arabic language with many Berber words mixed in, and reflects the fact that the Moors are descendants of both the Arabs and the Berbers. Many people in the larger cities and villages speak French, which is also an official language of Mauritania.

# **Education and Literacy Rates**

It is not mandatory that children in Mauritania attend school, and attendance is far from universal. While girls often attend elementary school, once this is completed, it is common for them to stay home. Elementary
school lasts 6 years and is followed by two cycles of secondary school. The lower secondary cycle lasts 4 years, and the upper secondary cycle lasts 3 years.

Schools that provide an Islamic education are common. These traditional schools often develop around a learned Islamic leader known as a *marabout*. Boys generally attend religious schools for 7 years, and girls attend for 2 years. While the emphasis is placed on religious learning memorizing passages from the Qur'an, students also study language, arithmetic, and logic. Mauritania has one major secular university, one Islamic institute of higher education, and some vocational institutes. Arabic is taught in all schools. Other local ethnic languages are also taught in elementary schools. French is taught throughout the public school system. During colonial rule, the French administration established public schools, mainly in the Senegal River Valley, where black Africans comprised most of the population.

The Peace Corps in Mauritania began an education project in July 2000 to strengthen the culture of learning, teaching, and service in general to secondary schools and to build capacities by providing quality instruction in English. This will also entail peer coaching Mauritanian English teachers as they build skills to be more qualified, creative, and effective in a work environment with few resources to support them. Another aspect will involve developing resources that will strengthen links between schools and parent associations, encourage strong participation on the part of the parents, and advocate for the education of all children.

There is great emphasis on homemaking skills for girls, so most daughters are taught aspects of raising a family and taking care of the household. Often, girls are educated at home instead of at school. Mothers are expected to prepare their daughters for their future careers as homemakers, while the fathers are expected to provide well for their daughters so they can grow up healthy and physically attractive. As of 2001, the literacy rate in Mauritania is little more than 40 percent. The literacy rate is slightly above 50 percent for males, and 30 percent for females.

## Religion

Islam is the official religion, and the population is almost entirely Muslim of the Malekite rite. Mauritanians are Sunni Muslims and have adhered to the Islamic faith since the 9th century. In Mauritania, as in most of West Africa, Islamic Sufi brotherhoods, known as *tariqas*, gained importance around the 13th century. Sufism is a religious movement stressing mysticism and the needs of the human spirit. The brotherhoods transcended ethnic and tribal lines, thus helping to develop a broad national identity beyond that of separate clans and ethnic groups.

Mauritania has two major brotherhoods, known as the Tijaniyya and the Qadiriyya orders. The Qasiriyya brotherhood stresses Islamic teachings, humility, generosity, and respect for one's neighbors. The Tijaniyya brotherhood places less stress on learning. It is a missionary order that denounces theft, lying, cheating, and killing, and emphasizes continual reflection on God.

Chinguetti, in the Adrar region, is the seventh Holy Place in Islam.

In Mauritania there is common belief in divination and supernatural powers associated with holy men who lead Islamic Sufi brotherhoods (mystical associations). These religious leaders are venerated among West Africans and North Africans and are considered well-educated. They are called *marabouts*, or *murabitun*, and it is believed that their *baraka*, or divine grace allows them to perform miracles. They make and administer amulets and talismans. These are believed to have mystical powers that give protection from illness and injury.

Cheikh Yacoub Ould El Cheikh Sidina, one of the most renowned sheikhs of the Mauritanian Sufi brotherhoods, died in Senegal in November 2002. He was approximately 80 years-old. His body was



#### Mosque

returned to Mauritania for burial. El Cheikh Sidina came from a Sufi family of learning widely-known in Mauritania and West Africa. The spiritual influence of El Cheikh Sidina's family reached Niger and Nigeria and it has many followers in Senegal where Cheikh Yacoub lived for 2 years before returning to Mauritania in 1989.

#### **Social Customs and Courtesies**

Mauritanians are considered friendly people, even in Nouakchott, which is overpopulated and poverty-stricken due to urbanization. Elders are respected by the young. This practice is known as *essahwa*, which requires the young to respect social customs in the presence of an elderly person. For example, a young Mauritanian would not smoke in front of an elder. Also, the youth use appropriate language (no swearing), avoid public displays of affection, and avoid talking too loudly in the presence of the elderly.

### Greetings

As in most of West Africa, elaborate greetings are traditional in Moorish society. Social activities revolve around tea, which is invariably strong and sweet. The first two glasses are almost obligatory, but declining the third glass is not impolite.

#### Dress

Mauritanian attire is influenced by the desert heat and Islamic norms. Men and women wear clothing that covers the entire body, leaving the face, hands, feet, and arms showing. Women wear a *malaffa*, which is a long cloak wrapped loosely around the body



Women Wearing Malaffas

from head to toe. The men wear a *dar'a*, which is a long, loose robe over baggy pants known as *sirwal*. Some men wear head-coverings, predominantly turbans or *hawli*, for protection from the winter cold



Man Wearing Hawli

and summer heat. Office attire for men is Western-style pants and shirts. Southern women wear dresses, or skirts, and blouses. They also wear long robes called *boubous*.

Female visitors should dress conservatively; miniskirts, shorts, and swimsuits are offensive to many Mauritanians.

### Food and Drink

The desert cuisine of the Moors is generally bland, consisting of rice, mutton, goat, camel, or dried fish. Unsweetened, curdled goat or camel milk often accompanies meals in private homes. A *mechui* is a traditional nomad's feast where an entire lamb is roasted over a fire and stuffed with cooked rice. Guests tear off bits of meat with their hands.

Lunch is the main meal of the day. Mauritanians commonly eat a spicy fish-and-vegetable stew, or a spicy rice mixed with *tishtar*, which are



Walk-Up Fast Food Restaurant

small pieces of dried meat. A common dinner meal is couscous; this consists of semolina wheat sprinkled with oil and water and rolled into tiny grains. The grains are then steamed and used in a variety of recipes. In some parts of Mauritania, couscous is known as *lachiri*.

A favorite desert drink is *zrig*, made from goat's milk, water, and sugar. Despite the heat of the desert, tea is common throughout the country. Mauritanians drink imported green tea from China, made with fresh mint and served in small glasses. Alcoholic beverages are forbidden in Islam, and in 1986 the government banned their import, purchase, and consumption. However, some hotels in Nouakchott do serve alcohol.

Before eating a meal, guests wash their hands and then gather around a large platter of food placed on the floor. They then scoop up small portions of food from the platter either with their hands or with utensils. Each person eats only from his or her side of the platter. Many house-holds use a central serving platter, but then provide diners with individual plates. In some households, the men and women dine separately.

#### Taboos

Photo permits are not required. However, taking photographs of something other than a tourist site is not recommended. Taking photographs of government buildings including post offices, airports, ports, radio antennas, and military installations is strictly forbidden. Some Mauritanians do not want their photos taken, and may expect payment for the privilege, so it is best to always ask first.

## Recreation

Soccer is the most popular sport played in Mauritania. Wrestling matches can usually be found on Saturday afternoons at the Stade de la Luttes (wrestling arena) at the western end of Rue Ely Ould Mohamed in Nouakchott.

# MEDICAL ASSESSMENT

Medical care and hygiene are well below U.S. standards. Mauritania's health care system is supported by several United Nations (UN) agencies, the World Health Organization, and numerous other nongovernmental organizations (NGOs).

Mass evacuation would be extremely difficult because the road conditions generally are poor, particularly in the country's interior. The country only has three paved roads. The National Hospital Center and the Nouakchott Military Hospital each have two ambulances.

The country lacks an adequate number of qualified medical personnel; it is estimated that there are as few as 320 physicians in the country. All physicians are trained outside Mauritania because the country has no medical school. The National School of Nurses and Midwives in Nouakchott trains nurses, midwives, and paramedical personnel.

Medical personnel generally speak Arabic and are fluent in French, while very few speak English. African dialects are spoken in the country's southern region.

Because of its limited domestic production, Mauritania imports most of its medical material, primarily from Algeria, the European community, Japan, Pakistan, Thailand, and the United States. Basic pharmaceuticals are available, although shortages exist of many specialized drugs.

Mauritania's blood supply does not meet U.S. standards. While the country is working with the World Bank and UNAIDS on initiatives to safeguard the blood supply, screening of blood for HIV currently is confined to Nouakchott. The country's only blood bank, collocated with the National Hospital Center, tests donated blood for hepatitis A, B, and C, HIV 1 and 2, and syphilis prior to transfusion.

### Disease Risks to Deployed Personnel

Mauritania is a high risk country for infectious diseases. Without force health protection measures, mission effectiveness will be seriously jeop-

ardized. Risk varies greatly depending on location, individual exposures, and other factors.

#### Food- and Waterborne Diseases

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

If local food, water, or ice from unapproved sources is consumed, diarrheal diseases can be expected to temporarily incapacitate a very high percentage of personnel within days. Hepatitis A and typhoid fever can cause prolonged illness in a smaller percentage of U.S. personnel exposed to contaminated food or water sources. In addition, cholera outbreaks can occur among the local population countrywide. A small number (potentially as high as 1 percent per month) of personnel consuming local food, water, or ice could develop symptomatic infection. Consumption of unpasteurized dairy products or raw animal products increases the risk of many diseases, including brucellosis and Q fever.

#### Vectorborne Diseases

In the southern third of the country, the climate and ecological conditions support large populations of arthropod vectors, including mosquitoes, ticks, and sand flies. Significant disease transmission is sustained year-round in this area, including urban areas. The northern two-thirds of the country has a desert ecology, with lower overall vectorborne disease risk. Many of the vectorborne diseases are even more common than officially reported because medical surveillance and diagnostic capability are lacking countrywide.

Malaria is the major vectorborne disease risk in Mauritania, capable of debilitating a high percentage of personnel for up to a week or more. Malaria is transmitted year-round with the highest risk in the southern more tropical parts of the country, including urban areas. The northern two-thirds of the country has a lower risk. In addition, there are a variety of other vector-borne diseases, including Rift Valley fever, which as a group constitute a very serious risk comparable to that of malaria. Personnel exposed to mosquitoes, ticks, sand flies, or other biting vectors are at high risk during the day or night, in both urban and rural areas.

### Sexually Transmitted Diseases

Gonorrhea, chlamydia, and other infections are very common, and may affect a high percentage of personnel who have sexual contact. Carrier rates for hepatitis B also are high. An infrequent or sporadic numbers of personnel having unprotected sexual contact, particularly with prostitutes, could become infected with HIV. Heterosexual contact is the predominant mode of HIV transmission. Though the immediate impact of HIV/AIDS and hepatitis B on an operation is limited, the long-term health impact on individuals is substantial.

### **Respiratory Diseases**

Mauritania lies adjacent to the "meningitis belt," where dry conditions from November through May, combined with crowding of local populations, result in large annual outbreaks of meningococcal meningitis. Meningococcal meningitis occurs year-round and countrywide, and an infrequent or sporadic number of cases could occur among U.S. personnel, particularly in crowded living conditions. Tuberculosis rates are high within the local population. Prolonged contact with the local population may result in conversion rates to tuberculosis skin testing (PPD screening) elevated over U.S. military baseline.

### Water-contact Diseases

Lakes, rivers, streams, or other surface water may be contaminated with the infectious agents that cause leptospirosis and schistosomiasis. Operations or activities that involve extensive freshwater contact may cause personnel to be temporarily debilitated with these diseases.

### Animal-contact Diseases

Infrequent cases of anthrax could occur among U.S. personnel with direct exposure to animals or through consumption of contaminated meats, especially beef. Rabies is a major health problem in the region. Dogs are the main source of human rabies exposure, and the risk exists countrywide, associated with animal contact (bites or scratches).

### **Key Medical Facilities**

While the government is decentralizing the health care sector, access to adequate secondary care is available only in major cities, primarily Nouakchott. Hospital facilities in Mauritania are very limited. The National Hospital Center has 400 beds, and as few as 100 hospital beds exist elsewhere in the country.

Facility	National Hospital Center
Coordinates	18-05-14N 015-59-16W
Location	B. P. 612, Nouakchott
Telephone	52-135, 51-733
Туре	Government
Beds	400, expandable to 500
Capabilities	Medical — infectious diseases; surgical — orthope- dic; ancillary — emergency room, 2 operating rooms, 10-bed intensive care unit (primarily post- operative), x-ray, laboratory, blood bank.
Comments	<ul> <li>National referral hospital. Sanitary and technical levels are considerably below U.S. standards.</li> <li>Poorly staffed, equipped, and managed. Crowded.</li> <li>U.S. Embassy personnel use hospital for emergency care only. Staff includes 20 well-trained physicians, 55 poorly trained nurses, and Western-trained dentists. About 10 percent of staff speaks English. Helipad. Two ambulances (no medical equipment). Water supply is not potable.</li> </ul>

Facility	Nouakchott Military Hospital
Coordinates	18-06-XXN 015-57-XXW
Location	Near airport, in a northern suburb of Nouakchott
Telephone	25-08-36, 25-08-37
Туре	Military
Beds	50, plus 20 reserved for VIPs
Capabilities	Medical — cardiology, internal, obstetrics, gynecol- ogy, pathology, pediatrics; surgical — general, oph- thalmology, orthopedic; ancillary — 4-bed intensive care unit, 3 operating rooms, endoscopy suite, labo- ratory, x-ray, ultrasound.
Comments	Only military hospital in Nouakchott. Clean facility in excellent condition. Emergency generator, laundry, incinerator on grounds. Two ambulances, but no emergency room. Equipment relatively new, service- able; medical supply shortages still exist. Recom- mended over National Hospital Center.

### HISTORY

In the Middle Ages, Mauritania was the cradle of the Almoravid movement, which spread Islam throughout the region and for a while controlled the Islamic portion of Spain. European traders began to show interest in Mauritania in the 15th century, and in 1814 it came under direct French rule.

Morocco opposed the country's independence in 1960 and tried to absorb it. But King Hassan II improved ties as part of his plan to divide Western Sahara. The eventual deal in 1976 brought more problems, with Mauritania under attack by Western Sahara's POLISARIO (Popular Front for the Liberation of the Saquia El Hamra and Rio de Oro) guerrillas and the subsequent downfall of its leader since independence, Moktar Ould Daddar, in a 1978 military coup. Colonel Mustafa Ould Salek, who became prime minister following the coup, was replaced in April 1979 by Colonel Ahmed Ould Bouceif and Colonel Muhammad Khouna Ould Haidalla. Bouceif died soon afterward in an airplane crash, and Haidalla became Mauritania's prime minister. Haidalla ended Mauritania's military involvement in the Western Sahara, and gave diplomatic recognition to the POLISARIO guerrillas of the Sahrawi Arab Democratic Republic (SADR). This worsened relations with Morocco until 1985.

Haidalla was replaced as prime minister by Colonel Maouya Ould Sidi Ahmad Taya in a December 1984 coup. Taya established a military government and began to reform the political system, holding local elections, and releasing some political prisoners. Taya strengthened relations with the former Soviet Union, China, and wealthy Middle Eastern states. His objectives were to gain access to trade and financial assistance, and eliminate Mauritania's dependence on the West.

Approximately 25,000 refugees from Western Sahara were living in Mauritania in 2001. Another 4,000 persons from Mali were residing in the country in refugee-like circumstances. Likewise, nearly 50,000 Mauritanians were refugees or asylum seekers at the end of 2001, including an estimated 40,000 in Senegal, 5,000 in Mali, and 4,000 in Europe and other Western countries.

Mauritania has a history of tension between the Moors and the non-Moor black Africans. The non-Moor black Africans resent Moor domination of the Mauritanian political system and armed forces.

#### **Chronology of Key Events**

12 May 1903	French protectorate of Mauritania established.
18 Oct. 1904	Status changes to French civil territory of Maurita-
	nia (part of French West Africa).
12 Jan. 1920	Mauritania becomes French colony.
27 Oct. 1946	Mauritania becomes overseas territory of France.
28 Nov. 1958	Receives autonomy (Islamic Republic of Mauritania).

28 Nov. 1960	Mauritania receives independence from France.	
1969	Morocco recognizes Mauritania.	
1976 - 1979	Mauritania annexes the southwestern region of	
	Western Sahara.	
1981	Diplomatic relations with Morocco break.	
1985	Diplomatic relations with Morocco resume.	
1989	Mauritania joins Maghreb Arab Union with Alge-	
	ria, Libya, Morocco, and Tunisia.	
1989	Government experiences internal racial clashes;	
	arrival of 200,000 Moors from Senegal heightens	
	tension; fighting breaks out along Senegalese border.	
1995	Food riots staged in Nouakchott.	
1999	Mauritania signs agreement to establish full diplo-	
	matic relations with Israel.	
2000	Mauritania threatens to expel Senegalese citizens if	
	Dakar continues with plans to use water from the	
	Senegal River for an irrigation project.	
2001	Mauritania is condemned by the Arab League after	
	foreign minister visits Israel.	

## **GOVERNMENT AND POLITICS**

#### Government

#### National Level

Mauritania is a highly centralized Islamic republic dominated by a strong presidency. The 1991 constitution provides for a civilian government consisting of a dominant executive branch, a senate and a national assembly. President Maaouya Ould Sid'Ahmed Taya has governed since 1984, first as head of a military junta, and then, since the 1992 multiparty election, as the head of a civilian government. In December 1997, Taya was re-elected president, receiving more than 90 percent of the vote. Although the election was contested by four opposition candidates and boycotted by the five-party Opposition Front coalition, Taya remained president.

**Executive Branch.** The executive branch consists of the president and 27 appointed members of the Council of Ministers. The president is elected for a renewable 6-year term of office. Maaouya Ould Sid'Ahmed Taya was re-elected in 1997.

**Legislative Branch.** The bicameral parliament consists of the senate, with 54 members, the lower house, and the national assembly, with 81 deputies. Part of the senate is subject to re-election every 2 years.

**Judicial Branch.** Mauritania's Code of Law was promulgated in 1961 and subsequently modified to integrate modern law



President Taya

with Islamic institutions and practices. The primary courts include 3 courts of appeal, 10 regional tribunals, 2 labor tribunals, and 53 departmental civil courts. A revenue court has jurisdiction in financial matters. With the introduction of Shar'ia in 1980, a special Islamic court was established. This court is presided over by a magistrate of Islamic Law, who is assisted by two counselors and two *ulemas* (Muslim jurists and interpreters of the Qur'an). A five-member High Council of Islam, appointed by the president, provides advice regarding the conformity of national legislation to religious precepts, at the request of the president.

### Local Level

Based on the 1991 constitution, local government is strongly influenced by Shar'ia.

#### Key Government Officials

President Prime Minister

Defense Minister Foreign Affairs Minister Maaouya Ould Sidi Ahmed Taya Cheikh Afia Ould Mohamed Khouna Kaba Ould Elewa Mohamed Ould Tolba

Politics

#### Elections

The election to fill seats for the national assembly was held in October 2001; the next presidential elections are scheduled for December 2003.

### Suffrage

All citizens 18 years of age or older are eligible to vote.



Presidential Palace in Nouakchott



#### Administrative Regions

## Parties and Pressure Groups

Mauritania has 29 registered political parties; the main ones are the ruling Parti Republicain Democratique et Social (PRDS), Action pour le

Changement (AC), Rassemblement pour la Democratie et l'Unite (RDU), Union des Forces Democratiques (UFD) and Rassemblement des Forces Democratiques (RFD).

### Foreign Relations

Mauritania has good and improving relations with the West. President Taya maintains ties with Israel despite Arab anger over the policies of the government of Ariel Sharon. While attending the UN Conference on Sustainable Development in Johannesburg in September 2002, Taya held talks with the Israeli foreign minister, Shimon Peres, at which he called for renewed Middle Eastern peace talks and an end to Palestinian suffering. A few days later, in Nouakchott, he accepted the credentials of Israel's second ambassador, Ariel Kirim (full relations were established between the two countries in 1999).

Although Europe remains the country's prime economic partner and France is keen to revive defense ties, the U.S. connection is also valuable for Mauritania. The government hopes to revive links within the Arab Maghreb Union, but its trade and development interests equally lie in relations with its West African neighbors, particularly Senegal, with which relations have not always been easy. This distinctive stance parallels Mauritania's cultural position in combining Moorish Arab and West African origins in a single state.

**United States.** U.S.-Mauritania relations are excellent but have undergone several transformations since Mauritania's independence. From 1960 to 1967, the United States maintained cordial relations with Mauritania and provided a small amount of economic assistance. During the June 1967 Middle East war, Mauritania broke diplomatic and consular relations with the United States, but restored ties 2 years later and maintained relatively friendly relations until the late 1980s, despite disagreements over the Arab-Israeli issue.

Between 1983 and 1991, when the U.S. Agency for International Development (USAID) mission in Mauritania ceased operations, the United States provided US\$67.3 million in development assistance. The United States also provided emergency food assistance through bilateral channels until 1992 and, subsequently, through multilateral channels. Since 1981, the United States has provided about US\$100 million in economic and food assistance.

In 1989, a rupture between Mauritania and Senegal resulted in Mauritania deporting tens of thousands of Senegalese citizens, which negatively affected U.S.-Mauritanian relations. In addition, Mauritania's support of Iraq prior to and during the 1991 Gulf War further weakened the strained ties.

Relations between the United States and Mauritania reached a low in spring 1991, as details of the Mauritanian military's role in widespread human rights abuses surfaced. The United States responded by formally halting USAID operations and all military assistance to Mauritania. Relations also suffered in the 1990s as a result of repeated, but later discredited, reports that slavery continued in some parts of Mauritania despite legal proscriptions.

In the late 1990s, the Mauritanian government began allowing the return of the Senegalese who were expelled or who fled in1989. They also turned away from Iraq and toward the West, and initiated a povertyreduction strategy while securing debt relief under the Highly Indebted Poor Countries (HIPC) initiative. These changes occurred as relations with the United States were improving. Of particular importance, the U.S. government resumed its military cooperation and training programs. In October 2000, Mauritania was among the initial group of countries named eligible for U.S. trade benefits under the Africa Growth and Opportunity Act (AGOA).

**Neighbors.** Mauritania faces few external threats but has experienced periodic downturns in its relations with Mali and Senegal over the issue of refugees on either side of its borders. Water is also a crucial point of contention between Mauritania and its immediate neighbors. The Significance of the Senegal River was highlighted by Mauritania's diplomatic dispute with Senegal in June 2000. The resource dispute was mixed with the possibility of further cross-border ethnic tension when

Mauritania threatened to again expel Senegalese citizens. The crisis, however, was resolved.

Mauritania regulates its border dispute with Senegal over the demarcation lines of the Senegal River within the framework of the Organisation pour la Mise en Valeur du Fleuve Senegal, in cooperation with Mali. This tripartite cooperation between Mauritania, Senegal, and Mali has extended into joint security along the borders to counter the infiltration of refugees and the problems of arms and drug-trafficking.

**Other Major Countries.** Mauritania has pursued a low-key strategy in Arab politics. It has rehabilitated and strengthened ties with Kuwait, Saudi Arabia, and Egypt.

Foreign diplomatic facilities in Mauritania include: Algeria, People's Republic of China, Democratic Republic of Congo, Egypt, France, Germany, Israel, Republic of Korea, Kuwait, Libya, Mali, Morocco, Nigeria, Qatar, Romania, Russia, Saudi Arabia, Senegal, Spain, Syria, Tunisia, United Arab Emirates, United States, and Yemen.

### ECONOMY

Due to poor management of state enterprises, Mauritania is heavily in debt, and relies on financial assistance. Mauritania's economy is centered primarily on mineral production, agriculture, fishing, and the service sector. Iron-ore mining is the most significant activity, and highgrade iron ore deposits are generally found in the northern province of Tiris Zemmour, close to the Western Sahara border. Mauritania has rich maritime resources that are threatened by over-exploitation. The fishing industry earns a large portion of the country's foreign income.

#### Statistics

GDP	US\$935 million
Annual growth rate	4%
Per capita income	US\$370

Agriculture	24% of GDP
Products	Livestock, millet, maize, wheat, dates, rice
Industry	30% of GDP
Types	Iron mining, fishing
Trade	40% of GDP
Exports	US\$370 million
Major markets	Japan 29%; Italy 14%; France 14%; Spain 10%,
·	Belgium/Luxembourg 7%; Switzerland 5%
Imports	US\$469 million — Foodstuffs, machinery, tools,
-	cloth, consumer goods.
Major suppliers	France 33%; U.S. 10%; Spain 9%;
	Germany 6%; Algeria 6%; Italy 4%;
	Belgium/Luxembourg 5%

#### Natural Resources

#### Mining

Mauritania's mining revenue stems primarily from iron ore, gypsum, fish, copper, phosphate, diamonds, and gold.

### **Fisheries**

The main fisheries can be divided into three categories: artisan, local industrial, and large-scale.

Artisan fisheries primarily operate from canoes within 18.5 kilometers of the shore. The canoes usually are wood, from 6–12 meters- (20–40 feet-) long. The fisheries use a variety of gear including cast nets, surrounding and floating gill nets, hand lines and beach seines. An adaptation of the ring-net purse seine is also used.

Local industrial fisheries usually operate in water depths of 50 meters (164 feet) or less. The boats average 13-25 meters (20-40 feet) in length, and nearly all carry purse seines. These purse seines are often 300-750 meters-(984-2,460 feet-) long and 35-60 meters- (11-197 feet-) high. Some of the larger seiners are equipped with acoustic detection equipment.



Fisherman on the Beach in Nouakchott

Large-scale fisheries primarily involve foreign ships, ranging from 35meter (115-foot) seiners to 85-meter (279-foot) trawlers. The larger trawlers have the capacity to process their catch aboard the ship. A 22kilometer territorial limit established by Senegal and Mauritania has reduced large-scale fishery activities in these coastal waters. Fish processing activities are focused in Nouadhibou.

Mauritania imposed a 2-month ban on commercial fishing in September and October 2002 to allow vulnerable species a chance to reproduce, but this annual measure is no longer sufficient to prevent the long-term erosion of stocks. Local fishermen and many outside observers blame an agreement with the EU that allows large European boats to take hefty catches in return for an annual payments. Better management of stocks and study of the marine ecosystem in Mauritanian waters will become necessary if the sector is to survive.

#### Petroleum and Gas Reserves

Although no exploitable hydrocarbon resources currently exist, Mauritania depends on its downstream oil industry and has an operating refinery in Nouadhibou. Mauritania's hopes to become a significant petroleum producer were bolstered with the news of successful drilling results from the Chinguetti (blocks 2-4 on Offshore Oil Field map) offshore appraisal. (The well is nowhere near the town of Chinguetti, which lies 600 kilometers inland.)

In an Independence Day speech 28 November 2002, President Taya announced that a consortium of international companies, led by Austra-



Offshore Oil Fields

lia's Woodside Petroleum had discovered two important sources of hydrocarbons offshore. Woodside Petroleum leads the international consortium exploring offshore Mauritania (blocks 2-6 on Offshore Oil Field map). The offshore waters of Mauritania have long been of interest to international oil companies, but only modern seismic and deep water drilling technology have made possible Woodside's recent finds. President Taya indicated that the Chinguetti oil field, 85 kilometers southeast of the capital, contains estimated reserves of 100 million barrels. Taya also remarked that a second oil field, Banda, found 20 kilometers to the east of Chinguetti, could contain oil reserves of 100 million barrels and significant reserves of natural gas. Taya suggested that crude production could begin in 2005.

However, final decisions of exploiting these fields will depend on the results of commercial studies, including deep water engineering solutions and investment decisions planned for 2003. If the study results are positive, production could begin in 2006.

Chinguetti's reserves are too small to be commercial, but the gas is sufficient to help overcome engineering difficulties in bringing crude to the surface from under 850 meters of ocean water. While deep, cold Atlantic waters will thicken the Chinguetti crude, the re-injected natural gas can help bring the oil to the surface. A production test on one of the appraisal wells showed good viscosity and flow. Woodside estimated the petroleum reserves of Chinguetti in excess of 100 million barrels.

Seismic surveys indicate that the Banda field is potentially broader than Chinguetti. Banda could have more than 100 million barrels of crude and a trillion cubic feet of gas. Woodside has scheduled an appraisal drilling for 2003.

Woodside will continue to invest in exploration of the five offshore blocs for which the Australian firm has operating rights. Other oil explorations in the country are undergoing seismic and geophysical studies (Blocks 1 and 7 on the Offshore Oil Field map). Woodside is also a junior partner in block 7, which is operated by the UK's Dana Petroleum. Dana is also operator of block 1. A Russian firm registered in Guernsey, UK and some Mauritanian investors are also exploring an onshore area.

As yet, the only tangible result of the discovery of oil has been a raise in local land prices. Real estate prices in Nouakchott have reportedly doubled in recent years in a local boom fueled by increased public spending, improved urban infrastructure, millions of dollars of debt relief, expatriate remittances, and anticipated oil profits.

#### Water

Mali has ratified a water use agreement for the Senegal River that was signed by Mauritania, Mali, and Senegal in May 2002. The accord was designed to protect the river, through a protocol on pollution (fining polluters) and by controlling developments that would affect the river system. The 1,700-kilometer (1,056 mile) Senegal River is a vital source of water and livelihood for the densely populated border region, stretching from the hilly Guidimakha region around Selibaby down through Kaedi to the lowlands around Rosso. Mauritania, Mali and Senegal set up an organization for the development of the Senegal River in 1972.

#### Trade

Mauritanian interest in doing business with the United States is very high. In 2002, the United States became Mauritania's second largest supplier of imported goods. Imports range from the lease of the latest model Boeing 737 aircraft and one-time purchases of heavy machine tools for mining companies, as well as U.S. agricultural products such as wheat, soybean oil, and poultry. The once-dormant chamber of commerce and industry has been restructured with the help of World Bank financing and is promoting trade with major European partners. Chamber officials have asked U.S. Embassy officials for assistance in training, information on AGOA, and in setting up of an American products trade show.

The Mauritanian government is encouraging joint ventures with companies from the most advanced technology countries, particularly with the United States. In January 2002, the government issued a new investment code intended to attract foreign investors by creating attractive terms for establishing an enterprise in the country.

### Services

Mauritania has an electrical generating capacity of 105,000 kilowatts; electrical output is 127/220 volts AC, 50 hertz. Round, two-pin plugs are typically used.

## THREAT

#### Crime

Despite a rise in crime, particularly regarding petty theft, Nouakchott remains one of the safest capital cities in Africa. Nouakchott is a latenight city, with many people walking around even at 2300. Even at those hours, walking around is considered safe for men. The area along the beach near the city is the most dangerous, where mugging and rapes have occurred. No one, especially women (even in a group), should walk along the beach at night. Foreigners of African descent are sometimes subjected to harassment by the police and Moors.

## **Travel Security**

There is still an uneasy peace with neighboring Mali, as Tuareg fighters (nomadic Malians engaged in periodic guerilla fighting) have taken refuge in Mauritania and use it as a base for attacks against Malian armed forces, creating a minor security concern for Nouakchott. The area south of Nema has occasionally been affected by the Tuareg insurgency. There have also been regional disturbances, some violent, involving cattle rustling and the weapons trade. Mauritania has agreed with Mali that neither side will allow rebels to operate from its territory.

The conflict in Western Sahara remains a security concern until a resolution is found. The issue affects the relations between both Mauritania and Morocco. While not a major security issue, members of the POLISARIO's military wing have taken refuge in Mauritania. The border with the Western Sahara remains unstable. There are thousands of landmines buried along the Mauritanian side, to include the area west of Nouadhibou on the peninsula. People have been killed here.

In addition to being one of the poorest countries in the world, the population is also ethnically diverse. The issue of slavery continues to affect everyday life and politics. All of these factors combine to make the country potentially volatile.

Women can be subjected to sexual harassment, especially when alone or with other women.

#### Terrorism

As in other parts of the region, the spread of Islamic fundamentalism among urban youth is of increasing concern. Nouakchott, meaning "place of the winds" in Hassaniyya, was hastily created in 1960 following Mauritania's independence from France. Over the last 3 decades, the population of Nouakchott has mushroomed from 50,000 to 500,000. The government has lagged behind in providing services and facilities for this population influx, forcing many citizens to live in squalid shantytowns. Several Islamic organizations have filled some of the gaps left by the government. The country's economic problems may contribute to increased disillusionment with the current situation and foster the growth of Islamic extremism.

Possible links between Mauritanians and Osama bin Ladin are also cause for concern. There has been U.S. criticism of the Mauritanian government's lack of vigilance regarding possible terrorist networks operating within its borders.

The smuggling of weapons and explosives into and out of Mauritania continues to be a force protection concern for U.S. visitors and diplomatic personnel, due to its potential links to terrorist-related activity.

Previous arrests related to arms trafficking have involved both civilian and army personnel.

## Drug Trafficking

The UN International Drug Control Program has reported that Mauritania is a cannabis-growing country whose crop is being sold within West Africa and in Europe. The UN also indicated that Mauritania is a transit point for cocaine from South America to North America and Europe.

### Major Intelligence Services

### **Opposition Forces**

Banned political parties include: Umma, an Islamic fundamentalist party that remains within the opposition political arena rather than resorting to violent measures, and Taliaa/Parti de l'Avant Garde, which takes its inspiration from Saddam Hussein and Iraq's Ba'athist movement. The Muslim Brotherhood is rumored to be active, especially in regions with strong Berber connections. A militant black organization also operates in the southern part of the country. Tuareg and black African groups are a potential insurgency danger, but have shown few indications of resorting to violence in recent years. The Forces de Liberation Africain de Mauritanie (FLAM) draws support from black Africans who believe that Islam and Arab influences are destroying their traditional values. The outlawed FLAM has indicated it is prepared to negotiate with the government. No information regarding FLAM operations has been published in Mauritania. FLAM has undertaken armed incursions from across the Senegalese border and has also published manifestos from Senegal.

Ethnic tension is a source of political instability in Mauritania between Moors and black Mauritanians. The latter fear further government Arabnationalization efforts in the country and racial discrimination. The politically marginalized and socially repressed members of the Halpulaar, Soninke, and Wolof ethnic groups may continue to represent sources of discontent. Previous social tensions have resulted in protests against the World Bank and the government's economic policies. Three days of rioting broke out in Nouakchott in January 1995 following a 25 percent increase in the price of bread. At that time, a curfew was imposed and many opposition leaders were arrested.

The leader of the Popular Front (FP) and President Taya's closest rival in the 1997 presidential elections, Mohamed Lemine Ch'bih Ould Cheikh Melainine, was arrested in April 2001 on charges of plotting subversion and sabotage with Libyan support. The opposition Union of Progressive Forces (UFP) condemned the government's actions and security forces broke up a subsequent demonstration by FP supporters. Although the prospect of hostilities is remote, the civil rights situation in Mauritania is substandard. Elections are widely perceived as being rigged, dissent is suppressed, and human rights abuses such as slavery continue to be reported.

#### Threat to U.S. Personnel

A number of environmental threats exist in Mauritania. The main contamination issue in Mauritania is the pollution of already scarce water supplies by raw sewage and saltwater intrusion. The significant mining industry also may pose risks of heavy metals contamination to surrounding waters and soils. The most significant air contamination is from leaded-gasoline vehicle emissions and residue from burning trash. Fish processing companies in Nouadhibou reportedly have used water contaminated with fuel oil and raw sewage, which may result in chemical or microbial contamination of consumer food products.

Water supplies contaminated with raw sewage are Mauritania's major pollution problem. From August to September, flooding contributes to surface water contamination. No permanent surface waters exist except for the Senegal River and its tributaries in the south. Alternative water sources (ponds, dug wells, boreholes) are scarce in other parts of the country and are of poor quality. In Nouadhibou, sewage treatment is non-existent, with open sewers and a lack of water treatment facilities. Contamination of water sources by human and animal waste is widespread. Tests have found that 85 percent of drinking water samples from Nouadhibou are contaminated.

In Nouakchott, the existing potable water supply, storage, and distribution systems are seriously inadequate. Contamination of water has resulted from frequent failure of lines and joints, and low operating hydrostatic pressures. Open-well dispensing points in Nouakchott are vulnerable to direct human and animal contamination. Reports indicate that rural residents along the coast of Nouakchott indiscriminately dispose of refuse and raw sewage in rivers, streams, and oceans.

In addition, the quaternary unconfined aquifer underlying the Nouakchott region is subject to permanent saltwater seepage.

## ARMED FORCES

## Organization and Capability

Mauritania's armed forces are relatively small and poorly equipped in relation to the vast amount of territory they are required to defend. Due to its small size, the armed forces receive considerable personal control and involvement from the president and minister of defense. The army is the senior service with the air force and navy as its subordinates. The armed forces' overall capabilities are adequate only for internal security functions. Without external support, their ability to handle a border conflict with one of their neighbors would be questionable.

There are some indications that Mauritania is gradually re-equipping its armed forces, however, its military is likely to remain little more than a heavily armed internal security force. Key military issues affecting morale include low pay, minimal training, spartan living conditions, poor relations between officers and enlisted soldiers, and ethnic dissension.

The greatest contrasts and often the cause of conflicting issues are between the officers and the enlisted troops, and between Afro-Mauritanian and Arab-Amazigh members. Lack of resolution following the repression, torture, and death of Afro-Mauritanians in 1989-91 still complicates relationships within Mauritania's ethnically diverse military. Many fear similar events could recur if the country's economic and military situation deteriorates as it did prior to the repression. There is also some concern within the military of a dispute with POLISARIO guerrillas or Moroccan forces, should the Western Sahara issue not be satisfactorily settled. The result could be new military clashes that involve Mauritania.

#### Mission

The armed forces will likely continue its focus on being employed domestically against ethnic unrest and in joint efforts with Senegal and Mali to patrol border areas against the infiltration of refugees, and to counter arms and drug trafficking.

## Strategy

Previously, the armed forces employed Soviet doctrine, modified due to influences of Iraq and Libya. Due to their move away from those countries, followed by an increase in inter-military training with the United States, a shift is expected in Mauritania's future military doctrine.

### Personnel

Two years of military service is compulsory for all Mauritanian males. Based on January 2002 statistics, the total personnel strength of the Mauritanian armed forces was 15,650. Of that, the army consists of 15,000 personnel, leaving the air force with 150 personnel, and the navy 500 personnel. There is an ethnic Arab armed forces reserve of 35,000 men, ranging in age from 20-50 years-old.

### Training and Education

Conscripts are trained in Mauritania. With the collapse of the Soviet Union, the practice of sending senior officers to Soviet defense and command schools ceased. This program was replaced by training in France. However, following the 1999 arrest in France of a Mauritanian officer accused of torture, this training also ceased.

### Capabilities

#### Future Requirements/Force Modernization

The military plays an important role in Mauritanian culture and will probably receive priority for some funding in the immediate future.

Until 1991, Libya and Iraq were Mauritania's major arms suppliers. During the Gulf War, Mauritania was the custodian of various Iraqi weapon systems, the current condition of which is unknown. Mauritania has also received some equipment of Western origin through the open arms market and with aid from Libya and Egypt. It is believed that France has offered to re-equip the Mauritanian armed forces and recently delivered a new patrol craft.

Although funds are unlikely to be made available to replace the army's main battle tanks and other armored vehicles, it is likely that some equipment will be upgraded in the near term. The air force has no combat aircraft in its inventory, and most of its other aircraft, with the exception of the BN-2A Defenders, require overhaul. The Mauritanian navy appears to be in the best shape regarding its equipment. Its small fleet is relatively modern and capable of handling its fishery protection mission. If funding is made available, a second OPV-54 class vessel may be acquired.

#### **Key Defense Personnel**

iba Ould Elewa
lonel Mohamed Lemine Ould N'Diayane

### **Force Disposition**

Army bases are located at Ayoun el Atrous, Bir Moghreim, Fderik (Fort Gouraud), Moudjeria, Nouadhibou (Port Etienne), Nouakchott, and Tidjikdja.



**Military Bases** 

The bulk of the Mauritanian army is deployed along the borders with Senegal and Mali. The military devotes a considerable amount of attention to urban internal security. Operations in a rural environment is generally augmented by members of the Gendarmerie Nationale.

### Army

### Organization

Mauritania is divided into six military regions. The Mauritanian army consists of 15 infantry battalions (seven motorized and eight garrisonbased), one armor battalion composed of T-54/55 main battle tanks, an armed reconnaissance squadron of AML and Saladin armored vehicles, and three artillery battalions armed with a variety of Soviet-era towed guns. The army also maintains four air defense batteries, which have also been provided with Soviet equipment (mainly supplied by Libya). Most mobile units are equipped with SA-7 manportable surface-to-air missiles.

The army deploys one Camel Corps battalion in the north and a second in the eastern portion of the country, supported by engineer companies. The army's special forces element includes a para-commando battalion. However, this battalion is of limited operational value due to a lack of helicopters in its inventory.

#### Personnel

The army's personnel strength declined following the 1989-91 border skirmishes with Senegal. However, there are recent indications that their numbers are gradually increasing. The army has 15,000 personnel.

### Equipment

Most of the army's equipment was acquired during the 1970s and 80s.

#### Armor

Туре	Role	Quantity
T-54/T55	Main Battle Tank	35
AML-60/90	Reconnaissance	60
Saladin	Reconnaissance	40
Panhard M3	Armored Personnel Carrier	20
Saracen	Armored Personnel Carrier	5



**Military Regions** 

### Artillery

Туре	Role	Quantity
105-mm M101A1	Howitzer	36
122-mm D-30	Howitzer	20
122-mm D-74	Howitzer	24
120-mm Brandt	Mortar	30
81-mm Brandt	Mortar	70
Air Defense		
Туре	Role	Quantity
100-mm KS-19M2	Antiaircraft Gun	12
SU-23-2 Twin	Antiaircraft Gun	20
ZPU-2 Twin	Antiaircraft Gun	24
ZPU-4 Quad	Antiaircraft Gun	12
Strella (SA-7/SA-9)	Surface-to-Air Missile	104

#### Air Force

#### Organization

Mauritania has a small and poorly equipped air force, with no dedicated combat aircraft. However, it does have a useful maritime patrol capability. The air force operates maritime patrol aircraft on behalf of the Ministry of Fisheries and the Customs Corps. The air force is mainly tasked to support the army and maritime/border patrol. Pilots and technicians are trained at civilian schools in France. There are air bases located at: Aioun el Atrousse, Bir Moghreim, Fort Gouraud, Moudjeria, Nouadhibou (Port Etienne), Nouakchott, and Tidjirkdja. The army provides air base security.

The air force lost a Xian Y-7-100C transport in May 1998 near Nema, killing 39 of the 42 passengers and crew.

#### Personnel

The air force has 150 personnel.
# Equipment

Helicopters in the air force inventory include the SA 316, SA-316B, and the Dauphin-Z-9A.

#### Air Defense Forces

All air defense systems are manned by army personnel.

#### Navy

# Organization

The Navy's primary mission is to patrol its 407-nautical-mile coastline, protect fisheries, and interdict drug operations. The headquarters and dockyard are based at Port Friendship, Nouakchott. There are minor facilities at Port Etienne, Nouadhibou.

## Personnel

The Mauritanian Navy has approximately 500-600 personnel (40 officers). Service is voluntary.

## Equipment

The naval order of battle consists primarily of former French and Indian patrol ships, patrol craft, and patrol boats. The fleet includes one JURA Class PS, one OPV 54 Class PC, one PATRA Class PC, and four MANDOVI MARINE 15-M Class patrol boats.

Assets for coastal surveillance include four aircraft: two Piper Cheyenne II twin-turbo prop delivered in 1981 and two Cessna 337F aircraft.

# **Coastal Defense Force/Marines**

The Mauritanian Fusilier Marine (FUMA), or Marine Forces Battalion, is located along the coast at Jreida (approximately 30 kilometers north of Nouakchott). Although they are Mauritania's equivalent of the U.S. Marine Corps, they have limited capabilities, and are unable to maintain

sustained combat operations. This unit was established in 1989, prior to the break in U.S./Mauritanian relations during the first war with Iraq, and actually received its initial training from a unit of U.S. Marines.

The FUMA is commanded by a major, and is organized into three line companies with an authorized strength of approximately 100 personnel. There is also a service support company, whose personnel strength is unknown.

#### **Paramilitary Forces**

The National Guard reports directly to the Minister of the Interior. It has approximately 2,000 uniformed personnel, in addition to 1,000 auxiliaries who can be called up during a national emergency.

The National Guard is deployed to secure land borders and for internal security duties. They have bases throughout the country. Battlefield skills are taught by the army while other skills are taught by the Gendarmerie Nationale. The National Guard appears to be deployed beyond its current manpower capability and insufficiently equipped.

Mauritania has a presidential security battalion; however, very little is known about it. It is believed that personnel assigned to the presidential bodyguard have been trained in Libya.

The Gendarmerie Nationale is a military police force with wide-ranging powers. It is organized into six regional companies and reports directly to the Minister of the Interior.

## National Police

The National Police is a civilian force responsible for national law enforcement, including security within and around refugee camps. The police have bases in all urban centers.

There is also a Customs Corps responsible for customs supervision at all sea, land, and air entry points.

# APPENDIX A: Equipment Recognition

## **INFANTRY WEAPONS**

## 9-mm MAT-49



Effective Range Caliber System of Operation Overall Length Feed Device Weight 200 m 9-mm Blowback, automatic 734 mm 32-rd detachable box magazine 3.4 kg

#### 7.5-mm MAS 49/56



Maximum Effective Range Caliber System of Operation Overall Length Feed Device Weight 600 m 7.5 x 54-mm Gas operated, tilting bolt 1,120 mm 10-rd detachable box magazine 4.10 kg (with empty magazine)

#### 7.62-mm FR-F1



Maximum Effective Range Caliber System of Operation Overall Length Feed Device Weight 800 m 7.62 x 51-mm (also made in 7.5 x 54-mm) Manual, single shot 1,138 mm (without stock spacers) 10-rd box magazine 5.2 kg (empty)

#### 0.30 M1 Carbine



Maximum Effective Range Caliber System of Operation Overall Length Feed Device Weight (Loaded) 300 m .30 caliber Gas, self-loading 904 mm 15- or 30-rd detachable box magazine 2.77 kg

#### 7.5-mm AAT-52



Maximum Effective Range Caliber System of Operation Length Feed Device Weight (Empty) Rate of Fire 800 m 7.5 mm Delayed blowback, automatic 500 mm Disintegrating link 9.15 kg (light barrel), 10.55 heavy) Cyclic, 700/900 rds/min e been converted to the 7.62 mm NATO version. th

 $\operatorname{\textbf{NOTE:}}$  Most in-service AAT-52s have been converted to the 7.62 mm NATO version, the AAT model F1.

#### 7.92-mm MG42



Maximum Effective Range Caliber System of Operation Length Feed Device Weight (Loaded) Rate of Fire 800 m; w/tripod, 2,200 m 7.92-mm Short recoil, automatic, roller locking 1.225 m DM1 belt or DM 13 and M13 links With bipod, 11.05 kg Cyclic, 1,000-1,300 rds/min

#### 7.62-mm FN MAG



Maximum Effective Range Caliber System of Operation Overall Length Feed Device Weight (Loaded) 1,500 m 7.62 x 51-mm Gas, automatic 1.26 m Belt 13.92 kg (with butt stock and bipod)

#### M1919



Maximum Effective Range Caliber System of Operation Feed 1000 m .30 caliber or 7.62-mm Automatic Belt

#### 50 cal. Browning M2 HB



Maximum Effective Range Caliber System of Operation Overall Length Feed Device Weight (Loaded) 1,500 m .50 caliber (12.7 x 99-mm) Short recoil; selective fire 1.656 m 100-rd disintegrating link belt 38 kg

## 75-mm M20 Recoilless Rifle



Crew
Maximum Range
Combat Weight
Length

1 6,400 m (HEAT) 1.44 kg 2.08 m

# ARMOR

T-54/55



Crew	4
Armament	1 x 100-mm D10T2S gun w/43-rds; 1 x 7.62-mm SMGT coaxial w/3,500-rds; 1 x 127-mm DShK antiaircraft w/500-rds
Maximum Speed	50 km/h
Maximum Range	460 km (650 km w/long range tanks)
Fuel Capacity	960 I
Combat Weight	36,000 kg
Length	9 m
Width	3.76 m
Height	3.03 m
Night Vision	Yes
NBC	Yes
Fording	1.4 -m
Gradient	60%
Vertical Obstacle	0.8 m
Trench	2.7 m

#### AML-90



Crew Configuration Armament

Armor Night Vision

**NBC** Capable Maximum Range Maximum Speed **Fuel Capacity** Fording

Gradient Height Length Width

# 3

- 4 x 4
- 1 x 90-mm gun w/20 rds 1 x 7.62-mm MG w/2,000 rds
- 2 x 2 smoke grenade dischargers w/12 grenades

8 to 12 mm Optional Optional 600 km 90 km/h 156 liters 1.1 m (without preparation); Amphibious (w/kit) 60% 2.07 m 5.11 m (gun forward)

1.97 m

## AML-60



Crew Armament	3 60-mm mortar 7.62 mm MC
Armor	7.02-11111 MG 8 to 12 mm
Night Vision	600 km
NBC Capable	5,500 kg
Maximum Range	600 km
Maximum Speed	90 km/h
Fording	1.1 m
Gradient	60%
Vertical Obstacle	0.3 m
Trench	0.8 m
Combat Weight	5,500 kg
Height	2.07 m
Length	3.79 mm (gun forward)

#### Saladin



Crew	
Armament	
Night Vision	
NBC Capable	
Maximum Range	
Maximum Speed	
Fuel Capacity	
Combat Weight	
Height	
Width	
Length	
Fording	
Gradient	

2 1 x 76-mm gun w/42 rds 1 x 7.62-mm MG w/2,750 rds No 400 km 72 km/h 241 liters 1,159 kg. 2.19 m (turret roof) 2.54 m 4.93 m 1.07 m 46%

#### Panhard M3



Crew/Passengers	
Configuration	
Night Vision	
NBC Capable	
Maximum Road Range	
Maximum Speed	
Gradient	
Trench	
Combat Weight	
Height	
Length	
Width	

2 +10 4x4 Optional No 600 km (Road)90 km/h (Water) 4 km/h 60% 0.8 m 6,100 kg 2 m 4.45 m 2.4 m

#### Saracen APC



Crew/Passengers
Configuration
Armament
Maximum Road Range
Maximum Speed
Gradient
Trench
Combat Weight
Height
Length
Width
Night Vision
NBC Canable

2 +10 6x6 2x7.62-mm MG (1 turret, 1 ring-mounted) 400 km 72 km/h 42% 1.52 m 10,170 kg 2.463 m 5.233 m 2.539 m No No

# ARTILLERY

#### 105-mm M101 Howitzer



Crew Caliber Maximum Range Rate of Fire

Prime Mover Length Weight 8 105-mm 11,270 m 10 rds/min (maximum) 3 rds/min (sustained) 6 x 6 truck 5.991 m (travelling) 2,258 kg (firing) 122-mm D-30



Crew	7
Maximum Range	1,000 m (direct fire) 15,300 m (conventional) 21,900 m (RAP)
Rate of Fire	6 rds/min
Combat Weight	3,210 kg
Length	5.4 m
Width	1.95 m
Height	1.66 m
Prime Mover	6 x 6 truck

#### 106-mm M40A1 Recoilless Rifle



Caliber Max Range Max Rate of Fire Elevation Traverse Weight 106-mm 6.9 km 5 rds/min +22 to -17 degrees 360 degrees 113.9 kg (combat order)



#### 81-mm MO-81-61 Mortar



Crew Caliber Maximum Range Rate of Fire

Tube Length

Weight

3 81-mm 5,000 m 10 rds/min (normal) 15 rds/min (burst) 8 rds/min (sustained) 1150.0 mm (MO-81-61C) 1450.0 mm (MO-81-61L) 42 kg

#### 120-mm BRANDT



Minimum range Maximum range Traverse limits Ammunition types Travelling Weight Length of barrel Elevation Rate of fire 500 m 9,000 m 17° HE, HE-RA, smoke, illum, practice, marker 402 kg 1.746 m with breech cap +45 to +80° 12 rds/min

#### **MILAN Ground Launcher**



Max Range and Flight Time Night Vision Device Warhead Type Warhead Penetration Guidance/Command Link Attack Profile Launch Platforms 2,000 m in 12.5 seconds Thermal imaging Unitary shaped charge 1000 mm of RHA SACLOS/Wire Direct LOS Ground tripod, compact turret

# RPG-7



Maximum Effective Range	1,700 m
Caliber	30-mm
Overall Length	1.1 m

#### SA-7 GRAIL (STRELA-2M/A)



Function Range Guidance Warhead Manportable SAM 3.7 km IR HE

**NOTE:** SA-7b; STRELA-2M/A electronic block in seeker is miniaturized. **RECOGNITION:** Manportable shoulder launched system; smoke signature at launch

#### SA-9 Gaskin



Type Guidance Maximum Range Maximum Altitude Launch Weight Length Low altitude surface to air missile system Passive IR homing seeker 4,200 m 3,000 m 30 - 30.5 kg 1.803 m

# 100-mm KS-19



Crew Maximum Range	15 21,000 m (horizontal) 15,000 m (vertical)
Rate of Fire	15 rds/min
Combat Weight	9,550 kg
Length	9.45 m
Width	2.35 m
Height	2.201 m

#### 57-mm S-60



Crew
Maximum Range
Rate of Fire
Combat Weight
Length
Width
Height

7 12,000 m (horizontal) 8,800 m (vertical) 100 - 120 rds/min 4,500 kg 8.6 m 2.054 m 2.46 m

#### 37-mm M1939



Crew Maximum Range Rate of Fire (Per Barrel) Combat Weight 3 - 6 6,700 m (vertical) 9,900 m (horizontal) 120 rds/min 2,676 kg

# 122-mm Field Gun D-74



Crew	10
Maximum Range	24,000 m
Rate of Fire	6/7 rds/min
Combat Weight	5,550 kg
Length	9.875 m
Width	2.35 m
Height	2.745 m

#### 23-mm ZU-23 cannon



Maximum Range2,500 m (horizontal) 1,500 m (vertical)Rate of Fire (Per Barrel)800-1,000 rds/minOperationGas, automaticFeedDisintegrating link beltCombat Weight75 kg )Length2.555 mNOTE: Mounted in pairs and fours on ZPU Twin and Quad systems

#### 14.5-mm ZPU-2 (Twin)



Crew
Maximum Range
Rate of Fire (Per Barrel)
Combat Weight
Length
Width
Heiaht

8,000 m (horizontal) 5,000 m (vertical) 150- 600 rds/min 1,810 kg 4.53 m 1.72 m 2.13 m

#### 14.5-mm ZPU-4 (Quad)



#### Crew Maximum Range Rate of Fire (Per Barrel) Combat Weight Length Width Height

#### 5

8,000 m (horizontal) 5,000 m (vertical) 150 - 600 rds/min 1,810 kg 4.53 m 1.72 m 2.13 m

#### AVIATION

SA 316



Crew Armament Maximum Speed Maximum Range Length 1 + 6 Assorted guns, missiles, or rockets 185 km/h 495 km 12.84 m

#### Dauphin-Z9A



Role Crew Maximum Speed Maximum Range Length Twin-turbine general purpose helicopter Pilot, co-pilot + 4 (can config for 12 passengers) 285 km/h 897 km 13.68 m

#### NAVY/COAST GUARD PATRA Class Patrol Boat



Type Complement Armament

Max Speed (knots) Range Displacement (t) LOA/Beam/Draft (m) Large Patrol Craft 20 (2 officers) 1x40-mm Bofors; 1x20-mm Oerlikon; 2x12.7-mm machine guns 26.3 1.750 nmiles at 10 knots 149.8 (full) 40.4x5.9x1.6
### **MANDOVI Class Patrol Boat**



Type Complement Armament Max Speed (knots) Range Displacement (t) LOA/Beam/Draft (m) Inshore Patrol Craft 8 1x7.62-mm machine gun 24 250 nmiles at 14 knots 15 (full) 15x3.6x0.8

# APPENDIX B: International Time Zones



## Greenwich Mean Time (GMT)

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 GMT is also known as Coordinated Universal Time (UTC).

Country	GMT	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
Antartica	-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
Austrailia North	+9.5 H	+14.5 H	+15.5 H	+16.5 H	+17.5 H
Austrailia South	+10.0 H	+15.0 H	+16.0 H	+17.0 H	+18.0 H
Austrailia West	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H
Austrailia 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
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

Country	GMT	Eastern	Central	Mountain	Pacific
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
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

Country	GMT	Eastern	Central	Mountain	Pacific
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
Gibralter	+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
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

Country	GMT	Eastern	Central	Mountain	Pacific
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
Kyrgystan	+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
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

Country	GMT	Eastern	Central	Mountain	Pacific
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
Nicaragau	-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
Papau 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
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

Country	GMT	Eastern	Central	Mountain	Pacific
Rwanda	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 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
Papau 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
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

Country	GMT	Eastern	Central	Mountain	Pacific
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
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

Country	GMT	Eastern	Central	Mountain	Pacific
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 Islands	+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	Km per Hour
Km per Hour	0.62	Miles per Hour

## Temperature

To convert Celsius into degrees Fahrenheit, multiply Celsius by 1.8 and add 32. To convert degrees Fahrenheit to Celsius, subtract 32 and divide by 1.8.



**Temperature Chart** 

# APPENDIX D: Holidays

## 2003 Holidays

New Year's Day
Tabaski (Feast of the Sacrifice)
Islamic New Year
Labor Day
Mouloud (Prophet's Birthday)
African Liberation Day (Anniversary of the OAU's Foundation)
Armed Forces Day
Korite (End of Ramadan)
National Day

## 2004 Holidays

New Year's Day
Tabaski (Feast of the Sacrifice)
Islamic New Year
Labour Day
Mouloud (Prophet's Birthday)
African Liberation Day (Anniversary of the OAU's Foundation)
Armed Forces Day
Korite (End of Ramadan)
National Day

NOTE: Muslim festivals are timed according to local sightings of various phases of the moon and the dates given above are approximations. During

the lunar month of Ramadan that precedes Korite (Eid al-Fitr), Muslims fast during the day and feast at night and normal business patterns may be interrupted. Many restaurants are closed during the day and there may be restrictions on smoking and drinking. Some disruption may continue into Korite itself. Korite and Tabaski (Eid al-Adha) may last from two to ten days, depending on the region

# APPENDIX E: Language

## Arabic

Arabic is considered by Muslims to be the language of Allah. The Qur'an is written in Arabic and is spoken by over 197 million persons worldwide.

Arabic belongs to the Semitic branch of Afro-Asiatic languages. All Arabs have as their mother tongue some local variety of Arabic. These vernaculars differ markedly. The local vernacular is used in everyday commerce, but rarely written. Contrasting to the local vernaculars is standard, or formal Arabic, which is used for writing and formal speech. Because the standard Arabic must be learned at school, large sectors of the Arab people do not command it sufficiently to use it themselves, although radio and other media are gradually spreading its comprehension. Standard Arabic has remained remarkably stable.

In grammar and basic vocabulary the Arabic literature produced from the 8th century to the present is strikingly homogeneous; the works of the medieval writers differ from modern standard Arabic hardly more than Shakespeare's language differs from modern English. Standard literary Arabic is capable of expressing the finest shades of meaning. The vernaculars in their present form cannot perform the same task. If they were adapted, such a development would fatally split the unity of the Arab world. Today, tensions exist between the standard language and the vernaculars, particularly in imaginative literature. In drama, the demand for realism favors the vernacular, and many poets are tending toward their mother tongue. In the novel and short story, the trend is toward having the characters speak in the vernacular while the author uses formal language. However, some of the most celebrated living novelists and poets write exclusively in the standard language.

## 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. Vowels are unwritten, although three markers are used to ensure proper pronunciation. While there is no capitalization in Arabic, each letter has a different form depending on where it falls in the word-at the beginning, the middle, the end, or standing alone.

Arabic is a Semitic language; its structure and grammar are different from English. Words are formed from roots by changing the vowels between the consonants, which usually 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
Can you help me	momkin tisa'idini
Do you speak English	haal taataakaalaam Englizi
Excuse me	asfaa
Good morning	sobah alKher
Good night	laylaa saaidaa
Goodbye	maa al saalamaa
Hello	marhaba
How	kayf
How are you	keef halaak
How much/many	kaam
Hurry	bisor'aa
I don't understand	aana laa aafhaam
I'm hungry	aana gaa'anaa
I'm lost	aana toht
I'm thirsty	aana aatshan
I'm tired	aana taa'aabanaa
No	laa

#### English

No smoking Please Thank you Welcome What What does this mean What is this When Where Which Who Why Why With the grace of God Yes

## Vocabulary

English American Embassy Arm (body) Bandage Beach Big Blanket Book Boots Bridge Building Coat Cold Early Exit Entrance

#### Arabic

maamnoo' al taadkheen min faadlaak shokran aahlaan wa saahlaan ma ma maa'ni haaza ma esm haaza maati aayn ay maan limaza al hamdu allah aywaa

### Arabic

sifaara amrikiya zaara aasaabe al shati kaabir Baataniye ketab boot al koobri al koobri al maabni mi'taf Barid mobaakir khorooj Dokhool

English	Arabic
Far	baa'id
Fast	saari'
First Aid Kit	ilbah is'aafaat aawaalliyaa
Flashlight	baatariyaa
Gloves	jowanti
Gulf	khaalij
Harbor	al mina
Hat	kobaa'aa
Head	raa'aas
Heavy	taagil
Highway	taarig
Hospital	mostaashfi
Hot	sakhen
Insect Repellent	tarid lilhaashaarat
Knife	saakin
Late	mit'akher
Leg	sag
Light	khaafif
Мар	khaarita
Market	Sook
Matches	ood sagab
Medicine	Daava'
Mosque	al jami'
Near	Kaarib
New	Jaadid
Old	gaadim
Open	maaftuh
Police	bolis
Radio	radyo
Right	sahh
River	al naahr
Soap	saboon

#### English

Small Seacoast Shoes Shut Slow Taxi Toilet Tower Watch Wrong

## Military Vocabulary

English Aircraft Aircraft Carrier Air Defense Airfield Ammunition Amphibious Antiair artillery Antilanding defense Antitank artillery Army Artillery Aviation Battalion Battleship Bomb Camouflage Cruiser (ship) **Chemical Weapon** 

#### Arabic

saagir al baahr shati al Baahr hiza maa'ful bati taaksi al twaaleet al borj sa'aah gaalaat

### Arabic

ta'ereh hameleh ta'erat defa' javi motar zaakhireh baar ma'i maadfa'iyeh modade al-ta'erat defa' zed al-aabrar maadfa'iyeh modade al-daababat jish maadfa'iyeh tiran kaatibeh baraajeh gaanbaaleh taamooyeh torad saalah Kimavi

### English Coastal Defense Corps Destroyer (ship) Division Engineer Garrison Gun Handgrenade Headquarters Helicopter Howitzer Infantry Latitude Longitude Machinegun Map Military Mine Minefield Mortar Nuclear Weapon Platoon Radar Reconnaissance Rifle Submachinegun Tank Tactics Torpedo Topography Weapon Weather

#### Arabic

defa' saheli fila maadmor faaraageh mohandes hamieh maadfa gaanbeleh baadwiyeh giadeh helicoopter hawetzer mosha'e khat al-aarad khat al-tool reshash khaariteh aaskaaria al-laagam haagl al-laagam haven saalah noovi faasileh radar 'estaatla' bandgiyeh reshash gaasir daababeh taktiki toorpid toboografia saalah al-taages



Arabic Alphabet

# APPENDIX F: International Road Signs



# 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 will reduce colds and other respiratory infections. Cots or sleeping bags should be arranged "head to toe" to avoid the face-to-face contact that spreads germs.

Contact with animals is not recommended. Animals should not be kept as mascots. Cats, dogs, and other animals can transmit disease. Food should not be kept in living areas as it attracts rodents and insects, and trash should be disposed of properly. Hazardous snakes, plants, spiders, and other insects and arthropods such as scorpions, centipedes, ants, bees, wasps, and flies should be avoided. Those bitten or stung should contact U.S. medical personnel.

All sexual contact should be avoided. Properly used condoms offer some protection from sexually transmitted diseases but not full protection.

Stress and fatigue can be minimized by maintaining physical fitness, staying informed, and sleeping when the mission and safety permits. Alcohol should be avoided as it causes dehydration, contributes to jet lag, can lead to depression, and decreases physical and mental readiness. Separation anxiety, continuous operations, changing conditions, and the observation of human suffering will intensify stress. Assistance from medical personnel or chaplains is available.

## Additional Information

### Water

If unapproved water, as found in many lakes, rivers, streams, and city water supplies must be used in an emergency, the water may be disinfected by:

- Adding calcium hypochlorite at 5.0 ppm for 30 minutes;
- Adding Chlor-Floc or iodine tablets according to label instructions;
- Heating water to a rolling boil for 5 to 10 minutes; or
- Adding 2 to 4 drops of ordinary chlorine bleach per quart of water and waiting 30 minutes before using it.

Either U.S. military preventive medicine or veterinary personnel should inspect bottled water supplies. Bottled water does not guarantee purity; direct sunlight on bottled water supplies may promote bacterial growth.

Water in canals, lakes, rivers, and streams is likely contaminated; unnecessary bathing, swimming, and wading should be avoided. If the tactical situation requires entering bodies of water, all exposed skin should be covered to protect from parasites. Following exposure, it is important to dry vigorously and change clothing.

# Rodents

Rodents should not be tolerated in the unit area; they can spread serious illness. Diseases may be contracted through rodent bites or scratches, transmitted by insects carried on rodents (such as fleas, ticks, or mites), or by contamination of food from rodent nesting or feeding. Personnel can minimize the risk of disease caused by rodents by:

- Maintaining a high state of sanitation throughout the unit area;
- Sealing openings 1/4 inch or greater to prevent rodents from entering unit areas;
- Avoiding inhalation of dust when cleaning previously unoccupied areas (mist these areas with water prior to sweeping; when possible, disinfect area using 3 ounces of liquid bleach per 1 gallon of water).
- Promptly removing dead rodents. Personnel should use disposable gloves or plastic bags over the hands when handling any dead animal and place the dead rodent/animal into a plastic bag prior to disposal.
- Seeking immediate attention if bitten or scratched by a rodent or if experiencing difficulty breathing or flu-like symptoms.

### Insects

Exposure to harmful insects, ticks, and other pests is a year-round, worldwide risk. The following protective measures reduce the risk of insect and tick bites:

- Use DoD-approved insect repellents properly;
- Apply DEET on all exposed skin;
- Apply permethrin on clothing and bed nets;
- Tuck bed net under bedding; use bed net pole;
- Avoid exposure to living or dead animals;
- Regularly check for ticks;
- Discourage pests by disposing of trash properly; eliminate food storage in living areas; and
- Cover exposed skin by keeping sleeves rolled down when possible, especially during peak periods of mosquito biting (dusk and dawn); keep undershirts tucked into pants; tuck pant legs into boots.

Uniforms correctly treated with permethrin, using either the aerosol spraycan method (reapply after sixth laundering) or with the Individual Dynamic Absorption (IDA) impregnation kit (good for 6 months or the life of the uniform) will help minimize risks posed by insects. The date of treatment should be labeled on the uniform.

Bed nets should be treated with permethrin for protection against biting insects using either the single aerosol spray can method (treating two bed nets) or the unit's 2-gallon sprayer. All personnel should sleep under mosquito nets, regardless of time of day, ensure netting is tucked under bedding, and use poles to prevent bed nets from draping on the skin.

### **DoD-approved insect repellents are:**

IDA KIT: NSN 6840-01-345-0237 Permethrin Aerosol Spray: NSN 6840-01-278-1336 DEET Insect Repellent: NSN 6840-01-284-3982

## Hot Weather

If heat is a threat in the area, personnel should:

- Stay hydrated by drinking water frequently;
- Follow work-rest cycles;
- Monitor others who may have heat-related problems;
- Wear uniforms properly;
- Use a sun block (SPF 15 or higher), sunglasses, and lip balm;
- During hot weather, wear natural fiber clothing (such as cotton) next to the skin for increased ventilation;
- Seek immediate medical attention for heat injuries such as cramps, exhaustion, or stroke. Heat injuries can also occur in cold weather;
- Avoid standing in direct sunlight for long periods; be prepared for sudden drops in temperature at night, and construct wind screens if necessary to avoid blowing dust or sand.

#### Sunscreens:

Sunscreen lotion: NSN 6505-01-121-2336 Non-alcohol lotion base sunscreen: NSN 6505-01-267-1486

#### WORK/REST TABLE

		EAS WOR	Y XK	MODER WOR	ATE K	HARD WORK			
Heat Cat	WBGT Index ( <sup>o</sup> F)	Work / Rest	Water Intake (Qt/Hr)	Work / Rest	Water Intake (Qt/Hr)	Work / Rest	Water Intake (Qt/Hr)		
1	78 – 81.9	NL	1/2	NL	3/4	40/20 min	3/4		
2	82 - 84.9	NL	1/2	50/10 min	3/4	30/30 min	1		
3	85 - 87.9	NL	3/4	40/20 min	3/4	30/30 min	1		
4	88 - 89.9	NL	3/4	30/30 min	3/4	20/40 min	1		
5	> 90	50/10 min	1	20/40 min	1	10/50 min	1		

The work/rest times and fluid replacement volumes will sustain performance and hydration for at least 4 hours of work in the specific heat category. Individual water needs will vary +/- (plus/minus) 1/4 qt/hr. NL = no limit to work time per hour. Rest means minimal physical activity (sitting or standing) and should be done in shade if possible. **Caution:** Hourly fluid intake should not exceed 1 <sup>1</sup>/<sub>2</sub> quarts. Daily intake should not exceed 12 quarts. Note: MOPP gear adds 10<sup>o</sup> to WBGT Index.

## Food

High risk food items such as fresh eggs, unpasteurized dairy products, lettuce or other uncooked vegetables, and raw or undercooked meats should be avoided unless they are from U.S. military approved sources. Those who must consume unapproved foods should choose low risk foods such as bread and other baked goods, fruits that have thick peels (washed with safe water), and boiled foods such as rice and vegetables.

## Human Waste

Military-approved latrines should be used when possible. If no latrines are available, personnel should bury all human waste in pits or trenches.

### **Cold Weather**

If cold weather injuries are a threat in the area, personnel should:

- Drink plenty of fluids, preferably water or other decaffeinated beverages;
- Closely monitor others who have had previous cold injuries;
- Use well-ventilated warming tents and hot liquids for relief from the cold. Watch for shivering and increase rations to the equivalent of four MREs per day;
- Not rest or sleep in tents or vehicles unless well ventilated; temperatures can drop drastically at night;
- Dress in layers, wear polypropylene long underwear, and use sunglasses, scarf, unscented lip balm, sunscreen, and skin moisturizers;
- Insulate themselves from the ground with tree boughs or sleeping mats and construct windscreens to avoid unnecessary heat loss; and
- Remember that loss of sensitivity in any body part requires immediate medical attention.

WIN SPE	id Ed		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	- <del>9</del> 0	-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 A 40 MPH Little Add Effe	Above Have ditional ct	LITTLE INCREASING DANGER DANGER Flesh may freeze within 1 minute							GREAT DANGER Flesh may freeze within 30 seconds													

## First Aid

## Basic Lifesaving

Those caring for injured persons should immediately:

- Establish an open airway,
- Ensure the victim is breathing,
- Stop bleeding to support circulation,
- Prevent further disability,
- Place dressing over open wounds,
- Immobilize neck injuries,
- Splint obvious limb deformities, and
- Minimize further exposure to adverse weather.

## **Injuries and Care**

## Shock

- Symptoms:
  - □ Confusion
  - □ Cold, clammy skin
  - □ Sweating
  - □ Shallow, labored, and rapid breathing
  - □ Rapid pulse

### ■ Treatment:

- □ An open airway should be maintained.
- □ Unconscious victims should be placed on their side.
- □ Victims should be kept calm, warm, and comfortable.
- □ Lower extremities should be elevated.
- □ Medical attention should be sought as soon as possible.

## Abdominal Wound

- Treatment:
  - □ Exposed organs should be covered with moist, clean dressing.
  - □ Wound should be secured with bandages.
  - **D** Displaced organs should never be reintroduced to the body.

## Bleeding

- Treatment:
  - Direct pressure with hand should be applied; a dressing should be used if available.
  - □ Injured extremity should be elevated if no fractures are suspected.
  - □ Pressure points may be used to control bleeding.
  - □ Dressings should not be removed; additional dressings may be applied over old dressings.
- Tourniquet:
  - □ NOTE: Tourniquets should only be used when an injury is life threatening.
  - □ A 1-inch band should be tied between the injury and the heart, 2 to 4 inches from the injury, to stop severe bleeding; wire or shoe strings should not be used.
  - □ Band should be tight enough to stop bleeding and no tighter.
  - Once the tourniquet is tied, it should not be loosened.
  - □ The tourniquet should be left exposed for quick visual reference.
  - □ The time that the tourniquet is tied and the letter "T" should be written on the casualty's forehead.

# Eye Injury

Treatment:

- Embedded objects should not be removed; dressings should secure objects to prohibit movement.
- Bandages should be applied lightly to both eyes.
- Patients should be continuously attended.
# Chest Wound

Symptoms:

- Sucking noise from chest
- Frothy red blood from wound

# Treatment:

- Entry and exit wounds should be identified; wounds should be covered (aluminum foil, ID card).
- Three sides of the material covering the wound should be taped, leaving the bottom untaped.
- Victim should be positioned to facilitate easiest breathing.

# Fractures

Symptoms:

- Deformity, bruising
- Tenderness
- Swelling and discoloration

# Treatment:

- Fractured limb should not be straightened.
- Injury should be splinted with minimal movement of injured person.
- Joints above and below the injury should be splinted.
- If not in a chemical environment, remove clothing from injured area.
- Rings should be removed from fingers.
- Check pulse below injury to determine blood flow restrictions.

# Spinal, Neck, Head Injury

Symptoms:

■ Lack of feeling and/or control below neck

Treatment:

- Conscious victims should be cautioned to remain still.
- Airway should be checked without moving injured person's head.

- Victims who must be moved should be placed, without bending or rotating victim's head and neck, on a hard surface that would act as a litter (door, cut lumber).
- Head and neck should be immobilized.

# Heat Injuries

### Heat Cramps

Symptoms:

- Spasms, usually in muscles or arms
- Results from strenuous work or exercise
- Loss of salt in the body
- Normal body temperature

# Heat Exhaustion

Symptoms:

- Cramps in abdomen or limbs
- Pale skin
- Dizziness, faintness, weakness
- Nausea or vomiting
- Profuse sweating or moist, cool skin
- Weak pulse
- Normal body temperature

### Heat Stroke

Symptoms:

- Headache, dizziness
- Red face/skin
- Hot, dry skin (no sweating)
- Strong, rapid pulse
- High body temperature (hot to touch)

Treatment:

- Victim should be treated for shock.
- Victim should be laid in a cool area with clothing loosened.
- Victim can be cooled by sprinkling with cool water or fanning (though not to the point of shivering).
- If conscious, victim may drink cool water (2 teaspoons of salt to one canteen may be added).
- Seek medical attention immediately; heat stroke can result in death.

# Burns

Burns may be caused by heat (thermal), electricity, chemicals, or radiation. Treatment is based on depth, size, and severity (degree of burn). All burn victims should be treated for shock and seen by medical personnel.

# Thermal/First Degree

Symptoms:

- Skin reddens
- Painful

Treatment:

- Source of burn should be removed.
- Cool water should be applied to the affected area.

# Thermal/Second Degree

Symptoms:

- Skin reddens and blisters
- Very painful

Treatment:

- Source of burn should be removed.
- Cool water should be applied to the affected area.
- Blisters should not be broken.
- A dry dressing should cover the affected area.

# Thermal/Third Degree

Symptoms:

- Charred or whitish looking skin
- May burn to the bone
- Burned area not painful; surrounding area very painful

### Treatment:

- Source of burn should be removed.
- Clothing that adheres to burned area should not be removed.
- A dry dressing should cover the affected area.

# **Electrical Burns**

Treatment:

- Power source must be off.
- Entry and exit wounds should be identified.
- Burned area should be treated in accordance with its severity.

# **Chemical Burns**

Treatment:

- Skin should be flushed with a large amount of water; eyes should be flushed for at least 20 minutes.
- Visible contaminants should be removed.
- Phosphorus burns should be covered with a wet dressing (prevents air from activating the phosphorous)

# Cold Injuries

# Hypothermia

Symptoms:

- Body is cold under clothing
- Victim may appear confused or dead

Treatment:

- Victim should be moved to a warm place.
- Wet clothing should be removed; victim should be dressed in warm clothing or wrapped in a dry blanket.
- Body parts should not be rubbed.
- Victims must not consume alcoholic beverages.

# Frostbite

Symptoms:

- Skin appears white or waxy
- Skin is hard to the touch

# Treatment:

- Victim should be moved to a warm place.
- Affected area should be warmed in 104 to 108° F (40° C) water for 15 to 30 minutes (NOT hot water).
- Affected area should be covered with several layers of clothing.
- Affected area must not be rubbed.
- Victim must seek medical attention.

# **Emergency Life-Saving Equipment**

Equipment may be improvised when necessary. Following is a list of possible uses for commonly found items.

Shirts = Dressings/Bandages Belts, Ties = Tourniquets, Bandages Towels, Sheets = Dressings/Bandages Socks, Panty Hose, Flight cap = Dressings/Bandages Sticks or Tree Limbs = Splints Blankets = Litters, Splints Field Jackets = Litters BDU Shirts = Litters/Splints Ponchos = Litters/Bandages Rifle Sling = Bandages M-16 Heat Guards = Splints

# APPENDIX H: Individual Protective Measures

# Security Threats

Individual protective measures are the conscious actions which people take to guard themselves against physical harm. These measures can involve simple acts such as locking your car and avoiding areas where crime is rampant. When physical protection measures are combined they form a personal security program, the object of which is to make yourself a harder target. The following checklists contain basic individual protective measures that, if understood and followed, may significantly reduce your vulnerability to the security threats overseas (foreign intelligence, security services, and terrorist organizations). If you are detained or taken hostage, following the measures listed in these checklists may influence or improve your treatment.

# Foreign Intelligence and Security Services

- Avoid any actions or activities that are illegal, improper, or indiscreet.
- Guard your conversation and keep sensitive papers in your custody at all times.
- Take it for granted that you are under surveillance by both technical and physical means, including:
  - □ Communications monitoring (telephone, telex, mail, and radio)
  - □ Photography
  - Search
  - □ Eavesdropping in hotels, offices, and apartments
- Do not discuss sensitive matters:
  - □ On the telephone
  - □ In your room
  - □ In a car, particularly in front of an assigned driver

- Do not leave sensitive personal or business papers:
  - □ In your room
  - □ In the hotel safe
  - □ In a locked suitcase or briefcase
  - □ In unattended cars, offices, trains, or planes
  - □ Open to photography from the ceiling
  - □ In wastebaskets as drafts or doodles
- Do not try to defeat surveillance by trying to slip away from followers or by trying to locate "bugs" in your room. These actions will only generate more interest in you. If you feel you are under surveillance, act as naturally as possible, go to a safe location (your office, hotel, U.S. Embassy), and contact your superior.
- Avoid offers of sexual companionship. They may lead to a room raid, photography, and blackmail. Prostitutes in many countries report to the police, work for a criminal organization, or are sympathetic to insurgent or terrorist organizations; in other words, are anti-U.S. Others may be employed by an intelligence service.
- Be suspicious of casual acquaintances and quick friendships with local citizens in intelligence/terrorist threat countries. In many countries, people tend to stay away from foreigners and do not readily or easily make contact. Many who actively seek out friendships with Americans may do so as a result of government orders or for personal gain.

In your personal contacts, follow these guidelines:

- Do not attempt to keep up with your hosts in social drinking.
- Do not engage in black market activity for money or goods.
- Do not sell your possessions.
- Do not bring in or purchase illegal drugs.
- Do not bring in pornography.

- Do not bring in religious literature for distribution. (You may bring one Bible, Koran, or other religious material for your own personal use.)
- Do not seek out religious or political dissidents.
- Do not take ashtrays, towels, menus, glasses, or other mementos from hotels or restaurants.
- Do not accept packages, letters, etc., from local citizens for delivery to the U.S.
- Do not make political comments or engage in political activity.
- Do not be lured into clandestine meetings with would-be informants or defectors.
- Be careful about taking pictures. In some countries it is unwise to take photographs of scenes that could be used to make unfavorable comparisons between U.S. and local standards of living or other cultural differences. Avoid taking any photographs from moving buses, trains, or aircraft.

The following picture subjects are clearly prohibited in most countries where an intelligence or terrorist/insurgent threat is evident:

- □ Police or military installations and personnel
- □ Bridges
- Fortifications
- Railroad facilities
- □ Tunnels
- Elevated trains
- Border areas
- Industrial complexes
- Port complexes
- Airports

# Detention

Most intelligence and security services in threat countries detain persons for a wide range of real or imagined wrongs. The best advice, of course, is to do nothing that would give a foreign service the least reason to pick you up. If you are arrested or detained by host nation intelligence or security, however, remember the following:

- Always ask to contact the U.S. Embassy. You are entitled to do so under international diplomatic and consular agreements, to which most countries are signatories.
- Phrase your request appropriately. In Third World countries, however, making demands could lead to physical abuse.
- Do not admit to wrongdoing or sign anything. Part of the detention ritual in some threat countries is a written report you will be asked or told to sign. Decline to do so, and continue demanding to contact the Embassy or consulate.
- Do not agree to help your detainer. The foreign intelligence or security service may offer you the opportunity to help them in return for releasing you, foregoing prosecution, or not informing your employer or spouse of your indiscretion. If they will not take a simple no, delay a firm commitment by saying that you have to think it over.
- Report to your supervisor immediately. Once your supervisor is informed, the Embassy or consulate security officer needs to be informed. Depending on the circumstances and your status, the Embassy or consulate may have to provide you assistance in departing the country expeditiously.
- Report to your unit's security officer and your service's criminal investigative branch upon returning to the U.S. This is especially important if you were unable to report to the Embassy or consulate in country. Remember, you will not be able to outwit a foreign intelligence organization. Do not compound your error by betraying your country.

# Foreign Terrorist Threat

Terrorism may seem like mindless violence committed without logic or purpose, but it is not. Terrorists attack soft and undefended targets, both people and facilities, to gain political objectives they see as out of reach by less violent means. Many of today's terrorists view no one as innocent. Thus, injury and loss of life are justified as acceptable means to gain the notoriety generated by a violent act in order to support their cause.

Because of their distinctive dress, speech patterns, and outgoing personalities, Americans are often highly visible and easily recognized when they are abroad. The obvious association of U.S. military personnel with their government enhances their potential media and political worth as casualties or hostages. Other U.S. citizens are also at risk, including political figures, police, intelligence personnel, and VIPs (such as businessmen and celebrities).

Therefore, you must develop a comprehensive personal security program to safeguard yourself while traveling abroad. An awareness of the threat and the practice of security procedures like those advocated in crime prevention programs are adequate precautions for the majority of people. While total protection is impossible, basic common sense precautions such as an awareness of any local threat, elimination of predictable travel and lifestyle routines, and security consciousness at your quarters or work locations significantly reduce the probability of success of terrorist attacks.

To realistically evaluate your individual security program, you must understand how terrorists select and identify their victims. Terrorists generally classify targets in terms of accessibility, vulnerability, and political worth (symbolic nature). These perceptions may not be based on the person's actual position, but rather the image of wealth or importance they represent to the public. For each potential target, a risk versus gain assessment is conducted to determine if a terrorist can victimize a target without ramifications to the terrorist organization. It is during this phase that the terrorist determines if a target is "hard or soft." A hard target is someone who is aware of the threat of terrorism and adjusts his personal habits accordingly. Soft targets are oblivious to the threat and their surroundings, making an easy target.

Identification by name is another targeting method gathered from aircraft manifests, unit/duty rosters, public documents (Who's Who or the Social Register), personnel files, discarded mail, or personal papers in trash. Many targets are selected based upon their easily identifiable symbols or trademarks, such as uniforms, luggage (seabags or duffle bags), blatant national symbols (currency, tatoos, and clothing), and decals and bumper stickers.

# Travel Security

Travel on temporary duty (TAD/TDY) abroad may require you to stay in commercial hotels. Being away from your home duty station requires increasing your security planning and awareness; this is especially important when choosing and checking into a hotel and during your residence there.

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

- You should not travel on commercial aircraft outside the continental U.S. in uniform.
- Prior to traveling by commercial aircraft, you should screen your wallet and other personal items, removing any documents (that is, credit cards, club membership cards, etc.) which would reveal your military affiliation.

**NOTE:** Current USMC policy requires service members to wear two I.D. tags with metal necklaces when on official business. Also, the current I.D. card must be in possession at all times. These requirements include travel to or through terrorist areas. In view of these requirements, the service member must be prepared to remove and conceal these and any other items which would identify them as military personnel in the event of a skyjacking.

- You should stay alert to any suspicious activity when traveling. Keep in mind that the less time spent in waiting areas and lobbies, the better. This means adjusting your schedule to reduce your wait at these locations.
- You should not discuss your military affiliation with anyone during your travels because it increases your chances of being singled out as a symbolic victim.
- In case of an incident, you should not confront a terrorist or present a threatening image. The lower profile you present, the less likely you will become a victim or bargaining chip for the terrorists, and your survivability increases.

# Hostage Situation

The probability of anyone becoming a hostage is very remote. However, as a member of the Armed Forces, you should always consider yourself a potential hostage or terrorist victim and reflect this in planning your affairs, both personal and professional. You should have an up-to-date will, provide next of kin with an appropriate power-of-attorney, and take measures to ensure your dependents' financial security if necessary. Experience has shown that concern for the welfare of family members is a source of great stress to kidnap victims.

Do not be depressed if negotiation efforts appear to be taking a long time. Remember, chance of survival actually increases with time. The physical and psychological stress while a hostage could seem overpowering, but the key to your well-being is to approach captivity as a mission. Maintaining emotional control, alertness, and introducing order into each day of captivity will ensure your success and survival with honor.

During interaction with captors, maintaining self respect and dignity can be keys to retaining status as a human being in the captor's eyes. Complying with instructions, avoiding provocative conversations (political, religious, etc.), and establishing a positive relationship will increase survivability. Being polite and freely discussing insignificant and nonessential matters can reinforce this relationship. Under no circumstance should classified information be divulged. If forced to present terrorist demands to the media, make it clear that the demands are those of the captor and that the plea is not made on your behalf. You must remember that you are an American service member; conduct yourself with dignity and honor while maintaining your bearing.

Hostages sometimes are killed during rescue attempts; consequently, you should take measures to protect yourself during such an action. Drop to the floor immediately, remain still and avoiding any sudden movement; select a safe corner if it offers more security than the floor. Do not attempt to assist the rescuing forces but wait for instructions. After the rescue, do not make any comment to the media until you have been debriefed by appropriate U.S. authorities.

# APPENDIX I: Dangerous Animals and Plants

# African Garter Snake

### **Description:**

Adult length usually 0.4 to 0.6 meter; moderately slender snake. Background color generally uniform black or grayblack. Head not distinct from the neck.



### Habitat:

Found in coastal forests, high-level grasslands, or arid savannas.

### Activity and behavioral patterns:

Non aggressive, nocturnal snake that spends its days hiding under stones or in burrows. Sluggish, bites only in self-defense.

### Venom's effects:

Venom likely neurotoxic. Not considered lethal to man.

# Burrowing Asp

# **Description:**

Adult length is usually less than 0.9 meter; relatively slender snake. Background color varies; usually uniform dark purplish-brown to black above. Short, conical



head, not distinct from the neck; snout broad, flattened, often pointed.

Fangs are well-developed and comparatively large in relation to the size of its head. Eyes minute with round pupils. Tail ends in distinct spine.

### Habitat:

Rain forests and savanna. Commonly lives under stones or in burrows.

### Activity and behavioral patterns:

May emerge at night, particularly after rain. Likely to bite if touched.

#### Venom's effects:

Venom primarily hemotoxic. Victims may experience intense local pain, swelling, and, in some instances, necrosis.

# Boomslang

### **Description:**

Adult length usually from 1.2 to 1.5 meters (3-5 feet); relatively slender. Background varies from black to green; no blotches or distinct spots. Short, stubby head and enor-



mous emerald eyes. Scales strongly keeled and overlapping.

# Habitat:

Most commonly found in dry woodland, thorn scrub, savannahs, and swamps near water. Not found in rain forest regions or true desert.

# Activity and behavioral patterns:

Diurnal; spends most of its time in trees and shrubs. Notably non aggressive and shy; quickly retreats if surprised. If cornered or restrained, inflates neck to more than twice its usual size.

### Venom's effects:

Potently hemotoxic; can cause severe bleeding internally and from mucous surfaces. Deaths reported.

# Black-necked Spitting Cobra

### **Description:**

Adult length is from 1.2 to 2.2 meters, maximum of 2.8 meters. Body color highly variable, ranging from pinkish tan in some geographical areas to uniform black in others.



### Habitat:

Found in moist savanna; shelters in abandoned termite mounds, rodent burrows, or hollow tree trunks.

### Activity and behavioral patterns:

Generally nocturnal, although juveniles active during day. Terrestrial yet fairly aquatic, good climber. Will usually flee if disturbed. When provoked, raises up, spreads hood, and may spit at intruder's face.

#### Venom's effects:

Venom primarily cytotoxic, causing serious local tissue damage. Large specimens can spit venom up to 3 meters, aiming at the eyes. The venom does not affect unbroken skin, but can cause great pain and possible tissue destruction in the eyes. Has caused permanent blindness in humans.

# West African brown spitting cobra

### **Description:**

Adult length usually 0.5 to 0.8 meters, maximum of 1.4 meters. Background is usually red-brown, brown or



maroon; orange-brown on the flanks and light orange-brown on the belly. The underside of the neck has a broad dark band that may form a complete ring on some specimens. This dark marking reportedly is less distinct in larger specimens.

### Habitat:

Primarily dry savanna and semi-desert areas; reportedly not found either in extreme desert or dense woodland habitats.

### Activity and behavioral patterns:

Apparently both nocturnal and diurnal (primarily juveniles); reportedly found under logs, rocks, other ground cover, or in holes when not active. Primarily terrestrial, but will climb into low bushes. Fast moving and alert, it will usually try to escape when encountered. However, if cornered, it will rear up, spread its narrow hood, and, if further provoked, spit twin jets of venom at its perceived foe.

### Venom's effects:

Not well characterized; an average wet venom yield of 100 milligrams has been reported. As with other spitting cobras, the venom may be more cytotoxic than neurotoxic in effect. The effectiveness of available antivenins is not known.

# Egyptian Cobra

# **Description:**

Adult length usually from 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 villages. 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 threatened, will rear and spread an impressive hood up to 12 centimeters (4.7 inches) across.

### Venom's effects:

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

# Puff Adder

### **Description:**

Adult length is usually from 0.6 to 1 meter (2 to 3 feet), to a 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:

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.

# Eastern Rhombic Night Adder

# **Description:**

Adult length usually 0.4 to 0.6 meter, maximum of 1.0 meter; moderately stocky snake. Background varies from gray to olive to pinkish



brown; patterned with gray, black, or brown chevrons or spots. Belly usually gray, but may be cream or yellow. Solid dark "V" marking on head.

# Habitat:

Open woodland, grassland, and savanna near water or other damp areas.

# Activity and behavioral patterns:

Nocturnal, but spends much time basking during day and/or sheltered in trash piles, rock crevices, and other hiding places. Generally non aggressive and docile, seldom attempting to bite except under extreme provocation. When threatened, will either flatten head and body or inflate itself with air, make several frantic strikes, and then glide away quickly.

# Venom's effects:

Mildly cytotoxic and usually not dangerous, but may cause acute discomfort. Bite usually results only in local pain, swelling, and lymphadenophy.

# Sahara desert viper

### **Description:**

Adult length usually 0.3 to 0.4 meter. Background generally yellowish, gray, or brown, with row of dark spots along back. Head lacks suborbital "horns."



### Habitat:

Found in sand dunes, loose sand, and in desert shrubs from sea level up to about 300 meters elevation.

### Activity and behavioral patterns:

Active at night; usually spends day buried in sand at base of scrub. Not usually aggressive. When provoked, gathers body into coil and rubs sides together to produce hissing noise.

### Venom's effects:

Venom mild cytotoxic and neurotoxic components. Bites reportedly painful, but usually not serious.

# Horned desert viper

### Description:

Adult length usually 0.5 to 0.6 meter, maximum of 0.9 meter. Background generally yellowish, yellowish brown, pale gray, pinkish, or pale brown, with rows of dark spots along back. Belly



whitish. May have long spine-like horns above the eyes.

# Habitat:

Found in deserts where there are 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 edema, redness, internal hemorrhage, and areas of gangrene. Venom has coagulant properties at low concentrations, anticoagulant properties at high concentrations. Fatalities rare.

# White-bellied carpet viper

### **Description:**

Adult length usually from 0.3 to 0.7 meters; fairly stout snake. Background color variable, usually brown, gray, or reddish; may have series of oblique



pale crossbars, interspersed with dark spaces, along back. Usually has a row of triangular or circular markings with pale or white edging on each side. Belly white. Head pear-shaped; top covered with small scales.

### Habitat:

Found in arid savanna, semidesert, and well-vegetated wadis. Not found in true desert, but is commonly found on desert's edge, oases, and elevated vegetated areas within deserts.

### Activity and behavioral patterns:

Terrestrial, although occasionally climbs into low bushes to avoid hot or wet surfaces. Moves relatively quickly. Primarily nocturnal; most active during first few hours of darkness. Hides in holes, under logs, rocks, and brush piles during daytime. When confronted, quickly assumes figureeight 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:

Little known of composition or toxicity of venom. It is likely similar to that of other African carpet vipers, which cause local swelling, incoagulable blood, and spontaneous bleeding in severe cases. Venom of carpet vipers generally slow-acting.

# West African Carpet Viper

#### **Description:**

Adult length usually 0.3 to 0.5 meter (1-1.5 feet). Its background color is usually brown or gray or shades in between. Generally of



two conspicuous dorsal patterns: a series of dark irregular crossbars on lighter background or a series of pale saddles with darker background, lighter on sides. Most have characteristic line of small white "eye-spots" along flanks. Belly pale, usually with brown or reddish spots. Head pear-shaped; top covered with small scales. Tail short. Scales rough and heavily keeled, giving impression of fine ridges running length of body.

#### Habitat:

Savanna, well-wooded areas, and forest edges. Hides in holes, under logs, rocks, and brush piles during day.

# Activity and behavioral patterns:

Terrestrial, although occasionally climbs into low bushes to avoid hot or wet surfaces. Moves quickly. Primarily nocturnal; most active during first few hours of darkness. When confronted, quickly assumes figureeight 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 reported throughout region; venom highly toxic to man. Venom primarily hemotoxic; internal and external hemorrhages common, as well as pain and swelling at bite site.

# Arthropods

# Fat-tailed scorpion

Although scorpions in the region are capable of inflicting a painful sting, only the *amoreuxi* and the Fattailed scorpion (shown here) are known to be life-threatening.



### Habitat:

The Fat-tailed scorpion is found in dry and desert areas, usually in stony soils, cactus hedges and arid mountainous regions and high plateaux. Also found on steep slopes of drifting sand dunes. Avoids humidity. Often found hear human habitations (such as in cracks in walls).

### Venom's effects:

It is one of the most potent scorpion venoms in the world. The species causes several deaths each year.

# Spiders

Although there are several spider species found in the region that are capable of inflicting a painful bite, none are considered life-threatening.

# Insects

There is little specific information of medical importance regarding insects. However, nearly all countries have at least one species of moth 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 two weeks. The substance is extremely irritating to the eyes; temporary blindness has been reported.

# Centipedes

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

# Millipedes

Millipedes do not bite and in general are



harmless. However, when handled, some larger millipedes (can grow to more than 50 millimeters long) secrete a noxious fluid that can cause severe blistering upon contact; some can squirt this fluid at least 2 feet.

# Plants

# Rosary Pea

### Other names:

Precatory bean, coral pea, crab's eyes, lucky beans, Paternoster beans.

# Mechanisms of toxicity:

Contains several indole alkaloids such as abrine and abrin (a toxalbumin), which can kill. The unchewed seeds are impervious and will pass through the GI tract without harm. Seeds are attractive and



frequently used to make rosaries, necklaces, etc. Poison can be absorbed through breaks in the skin if integrity of the hull is compromised; for example, while stringing beads for a necklace. Onset of toxicity usually in one to three days. Rosary pea is documented to have a quickly fatal potential (neurotoxin and hemocoagulant), having killed a child who thoroughly chewed one seed. Dermatitis can occur from wearing a necklace of stringed beads.

# **Comments:**

The genus includes 17 species of slender, twining vines with a woody base, usually supported by other plants or a fence. Fruit is a dehiscent pod; inside the pod are three to five glossy, red and black seeds (used by many as ornaments). Note: Rosary pea seeds are black at the site of attachment (hilum) and are easily confused with the much less toxic Mexican Rhynchosia (piule). The colors are reversed in piule seeds. Symptoms of toxicity include nausea and vomiting with abdominal pains, bloody diarrhea, fever, shock, coma. Used in South America and Africa in folk medicine.

# 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 poisonous root is occasionally mistaken for an edible tuber, especially 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).

# Crownflower

### Other Name:

Milkweed

# Mechanisms of toxicity:

Sap has extremely irritant effect on the eyes; also causes an allergic type contact vesicant skin reaction. The active principles include calcium



oxalate, a proteolytic enzyme, digitalis-like glycosides, and an unidentified allergen.

### **Comments:**

Flowers are candied by Chinese in Java. Poisonings have resulted in death. Has been used as arrow poison in Africa. Roots used as chew-sticks in Africa.

# Croton

### Other names:

Ciega-vista, purging croton.

### Mechanisms of toxicity:

Long-lasting vesicular dermatitis results from contact with the toxic resin. The cathartic and purgative properties of



the toxins (croton oil, a "phorbol," in leaves, stems, and seeds) causes severe gastroenteritis, even death; 20 drops potentially lethal (the oil applied externally will blister the skin). Many members covered with hundreds of sticky hairs that cling to the skin if contacted. Contact with the eyes can be very serious.

#### **Comments:**

A wooly-haired annual herb, or evergreen bush, or small tree with smooth ash-colored bark, yellowish-green leaves, small flowers, and fruit.

# Yellow Heads

# No Photograph Available

#### Other names:

Woolly-headed gnidia.

# Mechanisms of toxicity:

Shrubs or small trees with extremely irritating resin. The root and flower of many species are strongly purgative; they are the source of the drug radjo. Some species have been shown to contain mezereine (irritant resin) and daphnine (an alkaloid).

# **Comments:**

Approximately 140 species found from tropical and southern Africa to the Arabian peninsula, and from Madagascar to western India and Sri Lanka.

# Rattlepod

### Other names:

Rattlebox, rattleweed, chillagoe, horse poison.

# Mechanisms of toxicity:

Contains pyrrolizidine alkaloids (monocrotaline, heliotrine, retrosine); can kill. Lowlevel ingestions can cause lung damage; high levels will damage the liver. Some species have caused toxicity through the contamination of flour or when incorporated in teas.



# **Comments:**

The fruits are inflated dehiscent legumes (pods) with parchment-like walls; the ripe seeds come loose within the pods and rattle when shaken. The flowers are pea-like. Found in open woods, on roadsides, margins, sandy soils, and fields.

# Balogna Sausage Tree

### No Photograph Available Mechanisms of toxicity:

Common in South Africa. The powdered fruit is used as medicine for numerous ailments (frequently applied externally). The ripe fruit is a purgative. The fruit can be 12 to 20 inches long and weigh up to 8 pounds. The fruit is regarded as highly poisonous; however, the toxic principles are not clear. Used by various African groups as a sexual excitant and in wound treatment. Often the fruit is added to beer to add intoxicating effect, but this tends to cause headache.

### **Comments:**

A large tree pollinated by bats; the tree has adapted by developing long stalks from which the flowers are suspended, hanging in open air so the bats have easy access.

# 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 contaminated flour. The pathologic effects (Budd-Chiari syndrome) take weeks to months, and death comes slowly over years. Has also caused chronic copper poisoning.

# **Comments:**

A large genus of worldwide dis-

tribution (250 tropical and temperate trees and shrubs).

# Kamyuye

# No Photograph Available

# Mechanisms of toxicity:

Contains latex with a mixture of sequiterpene alcohols. Has long been used as a medicinal. Used in Africa as a poison. Deaths have occurred when the bark was used to prepare a medicine for stomach problems.

# **Comments:**

Tropical African aromatic shrub. Source of vanilla-scented oil.



### Mole Plant

#### Other names:

Caper spurge, Mexican fire plant, milkweed, red spurge, poison spurge, mala mujer, cypress spurge, cat's milk, wartwort, sun spurge, candelabra cactus, Indian spurge tree, milkwood,



pencil tree, pencil cactus, rubber euphorbia.

#### Mechanisms of toxicity:

Herbs, often with colored or milky sap, containing complex terpenes; irritate the eyes, mouth, and gastrointestinal tract, and many cause dermatitis by direct contact. In some cases rain water dripping from the plant will contain enough toxic principle to produce dermatitis and keratoconjunctivitis; can blind. Some contain urticating hairs (skin contact breaks off ends and toxic chemicals are injected). The caper spurge has killed those who mistook the fruit for capers. The Mexican fire plant was known for having medicinal properties in the first century and has killed children. Red spurge causes dermatitis. The pencil cactus has an abundant, white, acrid sap extremely irritating to the skin; has caused temporary blindness when accidentally splashed in the eyes, and has killed as a result of severe gastroenteritis after ingestion.

### **Comments:**

Approximately 2,000 species of extremely variable form; may appear as herbs, shrubs or trees — many are cactus-like. Fruit is usually a capsule opening in three parts, each one seeded; sometimes a drupe.

# Black Henbane

#### Other names:

Insane root, fetid nightshade.

# Mechanisms of toxicity:

Old well-known medicinal and deadly poison (hyoscyamine, atropine) with many uses in many cultures. Tropine alka-



loids in the seeds (in a pod); has resulted in death; dermatitis (low risk).

### **Comments:**

Erect, hairy plant with coarse, hairy stems 1-5 feet tall, native to Europe. Found in "weed communities" along roadsides on nutrient-rich sandy soils and loam. Has yellow flowers with violet veins. Fruits are capsules containing many black seeds (can be confused with the poppy plant seeds).

# **Pokeweed**

### Other names:

Pokeberry, poke salet.

# Mechanisms of toxicity:

Mature stems, roots, and berries are poisonous (saponins mostly in foliage and roots). Death possible if not prepared properly.



### **Comments:**

Young shoot tips, less than 6", eaten in many cultures, including Canada; requires proper preparation (boiled with water changes; water contains toxic substances — kills snails that carry bilharzia). Dye from berries used to color ink, wine, sweets.

# Poisonvine

# No Photograph Available

#### Other names:

Arrow poison plant.

# Mechanisms of toxicity:

Seeds have digitalis-like toxins and are used as arrow and spear poison in Africa.

### **Comments:**

Genus of 38 tropical species of shrubs. Monkeys have died after eating a few leaves.

# Physic Nut

### Other names:

Purging nut, pinon, tempate, Barbados nut.

### Mechanisms of toxicity:

Ouickly fatal potential. Fruit has two or three black, oily, pleasant tasting, poisonous seeds (also toxic roots and leaves) containing a plant lecithin (a toxalbumin called curcin) which, in contrast to many of the toxic lecithins, causes toxicity rapidly caused death (has severe toxicity can follow ingestion of a single seed); also has intensely cathartic



oils (some have used the oil for lamps, etc.); has caused fatal intoxica-

tion. Bark has been used as a fish poison. Also a skin irritant (hairs), as are all euphorbs.

### **Comments:**

170 species of warm and tropical northern American trees or shrubs, usually with red flowers. Naturalized worldwide. Fruit is a three-sided capsule in many species.

# 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; widely naturalized.

# Swizzle Stick

# No Photograph Available

### Other names:

Boboro, dinque pinque, African rauwolphia.

# Mechanisms of toxicity:

Potentially fatal systemic poison. Can cause dermatitis. Contains more than 40 indole alkaloids (yohimbine, reserpine, etc.), many of which are vasoactive. Can cause depression lasting months after withdrawal.



Native to Central America, now widespread in many tropical regions. Several indole alkaloids. Poisoning known to cause death in Mexico.

#### **Comments:**

Swizzle Stick is a small tree, growing to 45 feet. African rauwolphia is a shrub up to 9 feet.

# Poison Ivy

### Other names:

Manzanillo, poison oak, poison sumac, Chinese/ Japanese lacquer tree, Japanese tallow or wax tree, scarlet rhus, sumac.

# Mechanisms of toxicity:

All contain allergenic nonvolatile oils known as



urushiols in the resin canals; these oils are highly sensitizing (delayed, type IV sensitivity) for some individuals

# **Comments:**

All species are deciduous, and the leaves turn red before being shed. Poison ivy is a climbing or trailing vine with trifoliate, alternate leaves smooth above and hairy beneath. Poison oak is never a climbing shrub, alternately three-leafed, smooth above and hairy beneath. Found in disturbed areas and along trails in North America and is a common source of dermatitis. Poison sumac is a shrub or small tree with 7 to 13 alternate leaflets, and is found in swampy areas of North America. Very few cases of dermatitis are caused by this species because it inhabits isolated areas and few people are exposed to it. Some individuals suffer intense, debilitating reactions from contact with the sensitizing chemicals.

# Strychnine

# Other names:

Nuxvomica tree, Snakewood tree.

### Mechanisms of toxicity:

The entire plant, including the seeds, contains the powerfully acting indole alkaloid strychnine, which can kill.



#### **Comments:**

Genus of 190 different species of trees, shrubs and vines with berry-like fruits, found in most tropical regions. Some have edible fruit despite dangerous seeds. It is a source of curare obtained by stripping and macerating its bark. Curare, now used as a muscle relaxant, was formerly used as an arrow poison by South American Indians.

# Nettle Tree

### Other names:

Ortiga brava, pringamoza.

### Mechanisms of toxicity:

Trees and shrubs with powerful stinging hairs. The intensity of sting delivered by these plants is species-variable. The



bushy, tree-like varieties tend to be more irritating. Any contact between leaves or branches and skin can result in profound burning pain that can last for more than 24 hours. There is no permanent damage.
## **Comments:**

35 native species in tropical and southern Africa, and tropical America. Often used as hedges or local medicinals.

# Panama Tree

## Other names:

Castano, tartargum.

# Mechanisms of toxicity:

Seeds edible, but pods have internal stiff bristles that easily penetrate skin, causing intense irritation.

## **Comments:**

200 tropical species.



# APPENDIX J: International Telephone Codes

	nternational Te	lephone Codes	
Algeria	213	Malta	356
Australia	61	Mexico	52
Austria	43	Morocoo	212
Bahrain	973	Netherlands	31
Belgium	32	Niceria	234
Brazil	55	New Zealand	64
Canada	1	Norway	47
China	86	Oman	968
Cvorus	357	Philippines	63
Denmark	45	Portugal	351
Diibouti	253	Qatar	974
Eavpt	20	Republic of Korea	82
Ethiopia	251	Saudi Arabia	966
Finland	358	Senegal	221
France	33	Sevchelles	248
Gabon	241	Singapore	65
Germany	49	Somalia	252
Greece	30	South Africa	27
Hawaii	1	Spain	34
Hong Kong	852	Śweden	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	On-base	550-HOME or
	or 0030-911		550-2USA

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