Saudi Arabia Country Handbook

This handbook provides basic reference information on Saudi Arabia, 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 Saudi Arabia.

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

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Saudi Arabia

KEY FACTS

Country Name.

Official Name. Kingdom of Saudi Arabia (Al Mamlakah Al Arabiyah As Suudiyah)

Conventional Short Form. Saudi Arabia

Head of State. King Abdullah bin Abdul Aziz Al Saud (2005)

Capital. Riyadh.

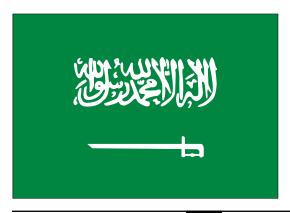
National Flag. Saudi Arabia's flag is green with the *Shahada* or Muslim creed in large white Arabic script (translated as, "There is no god but God; Muhammad is the Messenger of God") above a white horizontal saber with the tip pointing toward the hoist side. The design dates to the early 20th century and is closely associated with the Al Saud family, who established the kingdom in 1932.

Population. 27,600,000.

Time Zone. UTC (formerly GMT) +3 hours.

Type of Government. Monarchy.

Languages. Arabic is the official language. English is widely spoken in cities and business circles.



National Flag



Riyadh

Telephone Country Code. 966.

Currency. 1 Saudi Riyal (SR) = 100 halalah; 5 halalah = 20 qurush.

Exchange Rate. US\$1 = 3.753 Saudi Riyal (January 2007).

Calendar. The fiscal year runs from 1 March through 28 February. The Islamic calendar is used.

U.S. MISSION

For more than 60 years, the United States and the Kingdom of Saudi Arabia have maintained a strong relationship based upon mutual respect and common interests. Diplomatic relations were established in 1933. The U.S. Embassy opened in Jiddah in 1944 and moved to Riyadh in 1984. In addition to the Embassy, the American government maintains consulates in Jiddah and in Dhahran. The United States and Saudi Arabia have a common concern for regional securi-

ty, oil exports and imports, and sustainable development. The United States is Saudi Arabia's largest trading partner, and Saudi Arabia is the largest U.S. export market in the Middle East.

U.S. Embassy

Location Collector Road M,

Riyadh Diplomatic Quarter

Telephone 966-1-488-3800 **Fax** 966-1-488-7360

Email riyadhACS@state.gov

Hours Saturday through Wednesday,

1330 to 1530

Mailing Address

From inside Saudi Arabia P.O. Box 94309,

Riyadh 11693, Saudi Arabia

From the United States APO AE 09803-1307, Unit 61307

U.S. Consulate – Jiddah

Telephone 966-2-667-0080 **Fax** 966-2-669-3078

Mailing Address

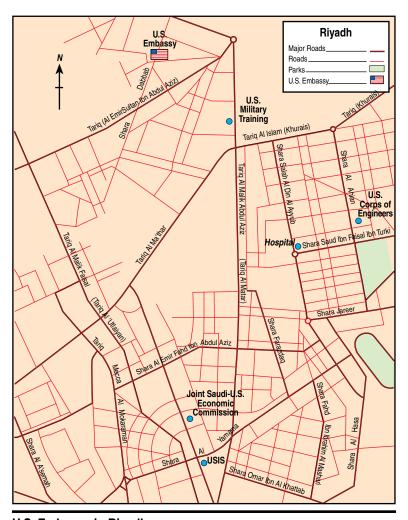
From inside Saudi Arabia P.O. Box 149, Jiddah 21911,

Saudi Arabia

From the United States APO AE 09803-1307, Unit 61307

U.S. Consulate - Dhahran

Telephone 966-3-330-3200 **Fax** 966-3-330-0464



U.S. Embassy in Riyadh

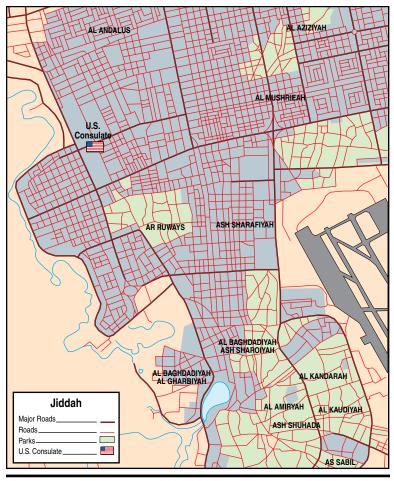
Mailing Address

From inside Saudi Arabia

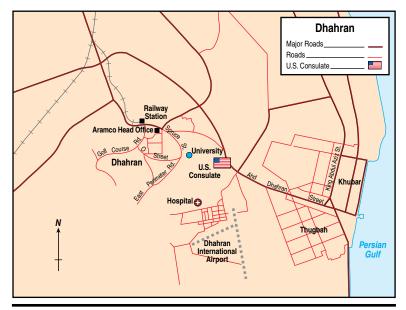
P.O. Box 38955, Doha-Dhahran 31942, Saudi Arabia

From the United States

APO AE 09858-6803, Unit 66803



U.S. Consulate in Jiddah

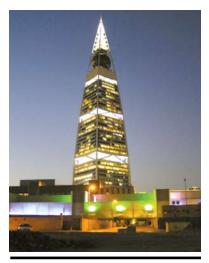


U.S. Consulate in Dhahran

Travel Advisories

The Department of State advises American citizens to postpone non-essential travel to Saudi Arabia because of attacks targeted against Americans. Since 2003, terrorists have targeted housing compounds, businesses, and Saudi government facilities with vehicle-borne explosives and automatic weapons. In separate incidents, terrorists have held hostages and killed Westerners, including Americans. Non-emergency employees and all dependents of U.S. Embassy personnel in Riyadh and Consulates General Jiddah and Dhahran were ordered to leave the country in April 2004. In December 2004, terrorists attacked the U.S. Consulate General in Jiddah, resulting in non-American staff casualties.

Reports suggest that terrorist actions against U.S. interests in Saudi Arabia continue to be a strong possibility. Americans should maintain low profiles, vary routes and times for all required travel, and be wary of mail and packages from unfamiliar sources Vehicles should not be left unattended and should be kept locked at all times, parked in protected areas with restricted access, and closely inspected by looking underneath and inside the trunk and engine. Americans should avoid staying in hotels or hous-



Faisaliah Tower in Riyadh

ing compounds that do not apply strict security measures, including armed guards, vehicle inspection, and a solid security perimeter to prevent unauthorized vehicles from approaching facilities.

Americans arriving in Saudi Arabia should register at the Embassy or consulate general and stay informed regarding security matters through the warden communications system. Registration information and a link to subscribe to warden messages are on the embassy website at http://riyadh.usembassy.gov/saudi-arabia/registration. html or register directly with the nearest U.S. Embassy or consulate.

Entry Requirements

Passport/Visa Requirements

A passport valid for at least 6 months and a visa are required for entry. Visas are issued for business and work, visits with close relatives, religious visits, and transit. Tourism visas are issued only for approved tour groups that follow organized itineraries. Visas require a sponsor, must be obtained prior to arrival, and can take several months to process. Female visitors and residents are required to be met by their sponsors upon arrival. Women traveling alone have experienced delays before being allowed to enter the country or to continue on other flights.

Holders of Israeli passports, those of the Jewish faith, and passengers not complying with Saudi conventions and behavior or who appear to be intoxicated are restricted from entering Saudi Arabia. Also, Mecca and Medina hold special religious significance, and only Muslims are allowed entry.

Women and children living in Saudi households must have permission from their Saudi husband or father to leave the country, even if they are American citizens. Obtaining exit permission for an adult American woman can take many months.

Immunization Requirements

A meningitis vaccine is recommended for all visitors and is required for all pilgrims to Mecca. A yellow fever vaccination certificate is required for all travelers arriving from countries that have infected areas.

Malaria is a year-round risk and one of these antimalarial drugs is recommended: prophylaxis, atovaquone/proguanil, doxycycline, mefloquine, or primaquine. Resistance to chloroquine has been reported.

Customs Restrictions

The following items may be imported without paying customs duty: 600 cigarettes or 100 cigars or 500g tobacco, perfume for

personal use, and a reasonable amount of cultured pearls for personal use. Duty is levied on cameras and typewriters. There is free import and export of local and foreign currency; Israeli currency is prohibited.

Forbidden items include alcohol, narcotics, weapons, ammunition, pork, contraceptives, pornography, non-Islamic religious materials, and natural pearls. Prescription drugs must be documented. Saudi customs and postal officials broadly define what is contrary to Islam, and Christmas decorations, magazines, photographs, books, or anything deemed pornographic or politically sensitive may be confiscated. Owners may be subject to penalties or fines. Airport censors inevitably hold videotapes for viewing.

Credit Cards/Banking

Most foreign currencies can be exchanged at commercial banks and money changers; the latter stay open longer. MasterCard, American Express, Diners Club, and Visa are accepted, as are travelers' checks. To avoid additional exchange rate charges, travelers are advised to take travelers' checks in Saudi riyals, U.S. dollars, or pounds sterling.

The work week in Saudi Arabia is from Saturday through Wednesday. The weekend is Thursday and Friday, with Friday being the Muslim holy day. All government offices and businesses close during prayer time, which occurs five times a day—at dawn, midday, mid-afternoon, sunset, and nightfall. Prayer times usually last a half hour and are listed in the daily newspapers.

Individual bank times may vary, and some banks may also have hours of operation on Thursdays, although that is considered the weekend. Generally, banking hours are Saturday through Wednesday, from 0800 to 1130 and from 1600 to 1800 in the Eastern

Province, from 0830 to 1200 and from 1630 to 1830 in the Central Province, and from 0830 to 1200 and from 1700 to 1900 in the Western Province. Businesses are usually open on Thursday mornings, and major shopping centers and malls are open all day Thursdays and on Friday afternoons. During the month of Ramadan, citizens work fewer hours.

GEOGRAPHY AND CLIMATE

Geography

Saudi Arabia is located on the Arabian Peninsula in the Middle East, east of the Red Sea and west of the Persian Gulf. Its central coordinates are 2500N, 04500E.

Land Statistics

Total Area	1,960,582	square	kilometers
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(756,985 square miles)

Water Area None

Coastline 2,640 kilometers (1,640 miles) **Area Comparative** Slightly more than one-fifth the

size of the United States.

Boundaries

Direction	Country	Kilometers (Miles)
North	Jordan	744 (462)
North	Iraq	814 (506)
North	Kuwait	222 (138)
East coastline	Persian Gulf	840 (522)
East	Qatar	60 (37)
East	United Arab Emirates	457 (284)

Direction	Country	Kilometers (Miles)
Southeast	Oman	676 (420)
South	Yemen	1,458 (906)
West coastline	Gulf of Aqaba, Red Sea	1,800 (1,118)
Total	_	7,071 (4,394)

Border Disputes

Some of Saudi Arabia's borders are in dispute because the modern Arab states were quickly and roughly drawn in the 20th century. Additionally, Saudi Arabia formerly shared a neutral zone with Iraq and another with Kuwait; both areas are now divided between the countries.

The discovery of new oil deposits in the 1990s led to border disputes with Yemen and Jordan. Only portions of the Yemen border are clearly defined. A June 2000 treaty drew up the border with Yemen, but a final agreement requires adjustments based on tribal considerations.

A de facto border between the United Arab Emirates (UAE) and Saudi Arabia reflects a 1974 agreement, which the UAE challenged in 2006. The UAE is claiming development rights for the huge Shaybah oil field that straddles the Saudi-UAE border, attempting to recover land it believes was lost to Saudi Arabia more than 30 years ago.

Bodies of Water

Saudi Arabia is west of the Arabian Gulf and east of the Red Sea. The Gulf's width varies from 338 kilometers (210 miles) to 55 kilometers (34 miles) in the Strait of Hormuz, which opens into the Arabian Sea. The Gulf is shallow and its coast is irregular. It was only after the construction of long breakwaters that the Gulf coast was

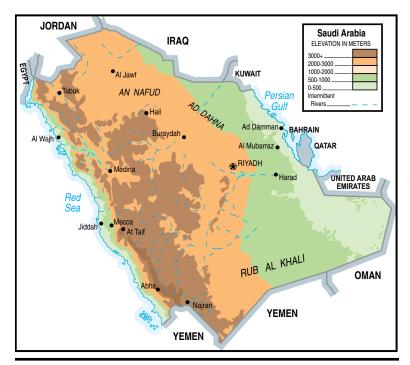
opened to seagoing tankers. More than 40 percent of the coastline has been filled in, eliminating half of Saudi Arabia's mangroves.

Except for springs in the eastern oases, there are no permanent inland bodies of water. In the northern Hejaz region, wadis (dry riverbeds) contain water for brief periods following significant rainfall. Medina is the largest and most important oasis in the Hejaz region. Wadi Bishah and Wadi Tathlith allow for oasis agriculture in the southern fertile Asir regions. Many areas in the north and east have significant aquifers beneath the desert. The largest is the Wasia, which has more water than the entire Gulf.

Topography

Saudi Arabia is the third largest country in Asia after China and India. It occupies four-fifths of the Arabian Peninsula and is a land bridge connecting Africa and Eurasia. It is composed of four main regions: the western mountains, the central uplands, the desert, and the coasts.

The western mountains, called the Arabian Shield, run parallel to the Red Sea and consist of two mountain ranges separated by a gap northwest of Mecca. In the north, the Hejaz Mountains rise sharply from the Red Sea. Seldom exceeding 2,100 meters (6,890 feet) in height, the range gradually decreases to about 600 meters (1,968 feet) near Mecca. The mountain wall drops abruptly to the sea with only a few intermittent coastal plains. The eastern slopes are less steep and are marked by wadis, or dry riverbeds, that lead the rare rainfalls down to the plains. Scattered oases, including Medina, permit settled agriculture. The more rugged Asir Mountains to the south are more than 2,740 meters (9,000 feet) high and extend along the Red Sea for 370 kilometers (230 miles) and inland about 320 kilometers (200 miles). The tallest peak, Jabal



Topography

Sawda, is 3,133 meters (10,276 feet) high. The western face drops steeply to the coastal plain, the Tihamah lowlands. The eastern slope of the mountain range gently becomes a plateau region with a number of fertile wadis.

The central uplands are east of the Hejaz and Asir ranges. Najd, a large, mainly rocky plateau area with small deserts and mountain areas, ranges from about 1,520 meters (5,000 feet) high in the west to about 610 meters (2,000 feet) high in the east. The Najd is scarred by extensive *harrat* (lava beds). Numerous wadis cross

the region in an eastward direction toward the Arabian Gulf. There are many oases in this area, and *sabkah* (large salt marshes) are scattered throughout. Najd is sparsely populated outside the oases. The best known of the mountain groups is the Jabal Shammar, northwest of Riyadh. The heart of the area is the Jabal Tuwayq, an arc-shaped ridge with a steep west face that rises between 100 and 250 meters (328 and 820 feet) above the plateau.

The desert regions, which cover about half of Saudi Arabia, lie to the east of the central hills; desert elevations range between sea level and 1,000 meters (3,280 feet). The largest continuous body of sand in the world, the Rub al Khali (the Empty Quarter) in the south, is Saudi Arabia's largest desert covering 647,500 square kilometers (250,000 square miles). Dune types vary to include moving crescent-shaped barchan, longitudinal dunes more than 160 kilometers (100 miles) long, and enormous dune mountains rising as high as 300 meters (985 feet), some of the highest of which are in the southeast corner of the desert. The Rub al Khali extends into Qatar, the UAE, western Oman, and eastern Yemen. The desert's northern counterpart, the An-Nafud, has an area of 57,000 square kilometers (22,000 square miles). It is covered by lengthy longitudinal dunes as high as 90 meters (300 feet) separated by valleys up to 16 kilometers (10 miles) wide. The sand has a red tint from iron oxide. The Ad Dahna



Tuwayq Escarpment Northwest of Riyadh

Desert, also called the river of sand, is a great arc of sand almost 1,448 kilometers (900 miles) long but in places only 48 kilometers (30 miles) wide, which connects the two deserts.

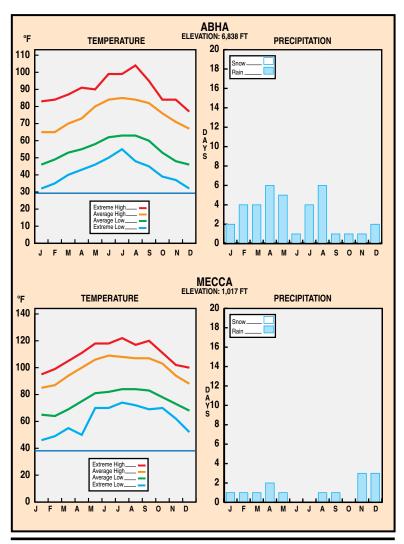
The coastal regions are on the Red Sea in the west and the Persian Gulf in the east. The Tihamah Plain in the southwest is a salty lowland tidal plain with a width of 16 to 65 kilometers (10 to 40 miles) parallel to the Red Sea. The tidal plain is of limited agricultural value but it is backed by potentially rich alluvial plains. The relatively well-watered and fertile upper slopes and the mountains behind are extensively terraced to allow maximum land use. The flat lowland plain along the Persian Gulf in the east is 60 kilometers (37 miles) wide. In the north is the Ad Dibdibah gravel plain and in the south is the Al-Jafurah sandy desert. The coast itself is extremely irregular, making the land surface unstable by merging sandy plains, marshes, and salt flats with the sea. The sea is shallow with shoals and reefs extending far offshore.

Climate

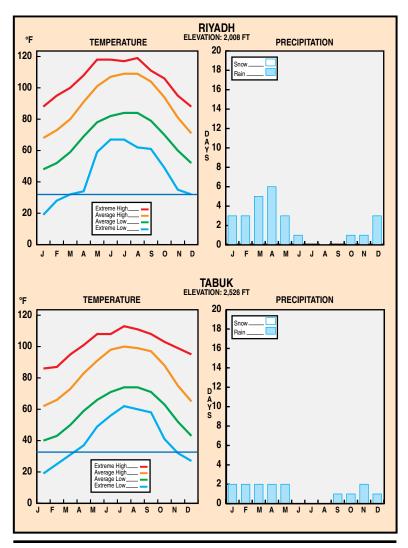
Temperature

Saudi Arabia has tropical and subtropical desert regions. The winds are generally dry, and almost all of the land is arid. Because of the dryness and the relatively cloudless skies, there are great extremes of temperature and wide variations between the seasons and regions.

Two main climate extremes exist between the interior and the coasts. In the summer, the central region is overwhelmingly hot and dry from May to October, with maximum temperatures of more than 50° C (122° F). The heat becomes intense shortly after sunrise and lasts until sunset, followed by comparatively cool nights. The winter is dry and cool, with overnight temperatures



Abha and Mecca Weather



Riyadh and Tabuk Weather

close to freezing. There can be severe frost and even weeks of snow in the mountains. Along the coasts of the Red Sea and the Persian Gulf, the desert temperature is moderated by the large bodies of water nearby. Temperatures seldom rise above 38°C (100°F), but the relative humidity is usually more than 85 percent and often 100 percent for extended periods of time. There is a hot mist during the day and a warm fog at night.

When the prevailing winds blow from the north, coastal areas become bearable in the summer and even pleasant in the winter. A southerly wind inevitably brings an increase in temperature and humidity and a particular kind of storm known in the Gulf area as a *kauf*. A strong northwesterly wind, the *shamal*, blows in late spring and early summer. In eastern Arabia, the *shamal* is particularly severe, producing sand and dust storms that can decrease visibility to a few meters.

Precipitation

In the north, annual rainfall varies between 100 and 200 millimeters (4 and 8 inches). In the south, except near the coast, annual rainfall drops to below 100 millimeters (4 inches). The higher parts of the west and south do experience appreciable rainfalls and some small areas receive 500 millimeters (20 inches) of annual rainfall. There is a summer monsoon in the mountainous Asir area between October and March where an average of 300 millimeters (12 inches) of rain falls. This is 60 percent of the annual total.

Much of the Rub al-Khali is hyper arid, defined as being without rainfall for more than 12 consecutive months; whole regions may not experience rainfall for several years.

Saudi Arabia's total precipitation averages 59 millimeters (2.3 inches) per year. Heavy rainfall sometimes results in flash floods.

Phenomena

There are frequent sand and dust storms that can decrease visibility to a few meters. Severe rainstorms are common in the mountainous region along the west coast. Some areas of Saudi Arabia are incapable of sustaining livestock or agriculture because of severe droughts.

Environment

Saudi Arabia faces many environmental challenges, to include lack of arable land, desertification, and the continuous sand dune shift to agricultural land. Preserving and developing water sources present continual challenges, as underground water resources become depleted. At current rates of consumption, the nation's water supply could be exhausted in 10 to 20 years. Despite being in one of the driest parts of the world, Saudi Arabia has very high per capita water consumption. Water is lavished on golf courses, gardens, and fountains, even as groundwater in overtaxed aquifers becomes salty and unusable. It is estimated that half of the groundwater reserves reported in a Saudi national survey in 1984 have been depleted.

Extensive seawater desalination facilities have long been used as the source of most water but the expense has led the government to consider a cheaper source: wastewater from sewage plants. Saudi Arabia has a US\$5-million project for water reuse. Besides the expense of treating seawater, experts warn that pollution of the Gulf waters could soon make it impossible to treat seawater for human consumption. Offshore oil extraction, exports, and old leaking ships are causing marine pollution. Oil tankers discharge millions of tons of oil sediments yearly. Increased urbanization has caused an inundation of sewage issues, hazardous wastes, and toxic chemicals into the sea.

Oil barges, supertankers, and pipelines risk oil spills. The world's largest oil spill, estimated at 8 million barrels, happened during the Gulf War of 1991 and polluted gulf waters and much of the Saudi gulf shoreline. The damage to the shoreline affected the shallow-water ecosystem, including the multimillion-dollar Saudi fisheries industry. The 700 oil wells set on fire in Kuwait also created high levels of atmospheric pollution and left a daily layer of oily soot on cars and outdoor furniture as far inland as Riyadh.

Air pollution in Saudi cities is the lowest in the Middle East. One initiative by Aramco, originally the Saudi-American Oil Company but now wholly Saudi-owned, recovers more than 3,500 tons of elemental sulfur daily from gas produced in association with crude oil.

Cross Country Movement

The Rub al-Khali desert and its northern counterpart, the An-Nafud desert, cover more than half of Saudi Arabia. The deserts contain sand mountains as high as 300 meters (984 feet). Severe sandstorms, which can reduce visibility to a few meters, are frequent and occur with little or no warning. Dust and sandstorms can last from 1 to 4 days, aggravating respiratory problems and damaging equipment.

Severe rainstorms with monsoon-driven winds and flooding are common in the mountainous region along the west coast. Heavy rains in an arid environment increase dust and the severity of subsequent sandstorms.

TRANSPORTATION AND COMMUNICATION

Transportation

Roads

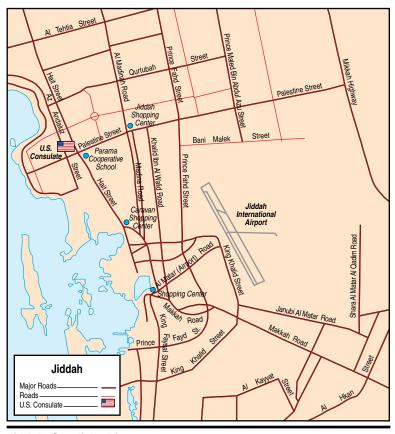
Saudi Arabia made road building a priority in 1970. A comprehensive road network was built in fewer than 20 years. There are 160,000 kilometers (100,000 miles) of roadways, of which one third are paved. The rest are improved earth. People and the oil industry are both dependent on this network. Extreme heat and drastic elevation changes in the southwest posed expensive engineering challenges.

Major arteries include the Trans-Arabian Highway that connects Jiddah, Mecca, and Medina in the west with Riyadh and the Gulf oil fields in the east. In the west, the highway includes a spectacular descent down the steep western cliff from At-Taif to Mecca. The Tapline Road extends from Ad-Dammam on the Gulf northwest to the Jordanian border. The Red Sea Road links At-Taif, Abha, and Jizan. Even in remote areas, most villages are connected to the larger road network.

A causeway that links Saudi Arabia and Bahrain was built in 1986 at a cost of US\$12 billion. Its 5 bridges rest on 536 concrete pylons, with 7 embankments constructed in shallow water.

With the highway system largely in place, the government has shifted its emphasis from construction to operational improvements and maintenance, while monitoring continued agricultural and industrial development and increased traffic. However, one new road project is under consideration: a 15-kilometer (9-mile) causeway between the Saudi coast and the Sinai Peninsula linking Saudi Arabia and Egypt.

Driving habits are generally poor; traffic accidents are a significant hazard. Driving seems to be more reckless in the western region, and is particularly reckless in Jiddah. Women are not allowed to drive on public roads. Men visiting for a short time may drive on a U.S. driver's license. American men employed in Saudi Arabia should obtain a local driver's license with the Department of Traffic Police. If involved in a traffic accident, one should remain at the



Jiddah, Saudi Arabia

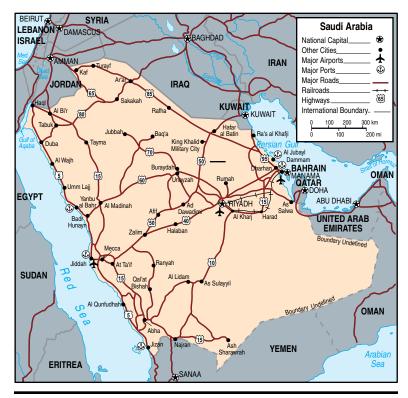


Highway Signs in Jiddah

scene and file a police report immediately, which is usually easy in the cities with an abundance of traffic policemen. Elsewhere, one should wait for a police car to drive past, or, in more remote areas, take down the plate number of the other vehicle and take a picture if possible before leaving the scene. Americans should contact their sponsor and the U.S. Embassy or the nearest U.S. consulate.

Bus/Public Transportation

The Saudi Public Transport Company (SAPTCO), the national bus company, has air conditioned buses that run on time within and between major cities. SAPTCO connects 10 major cities: Mecca, Medina, Riyadh, Jiddah, At-Taif, Ad-Dammam, Abha, Gassim, Tabuk, and Hail. SAPTCO also provides transportation to 10 neighboring countries: the United Arab Emirates, Bahrain, Qatar, Kuwait, Egypt, Syria, Jordan, Yemen, Sudan, and Lebanon. Buses have a separate compartment for women, and bus stops are segregated by gender. Tickets should be purchased one day in ad-



Transportation

vance (especially during the *Hajj* or in the summer). Seating is not reserved; front seats are given to families. Smoking is prohibited.

SAPTCO plays a significant role in transporting pilgrims to the holy cities of Mecca and Medina from airports and seaports. Only Muslims are allowed to travel on buses to, from, or through Mecca and Medina. Buses between Riyadh and Jiddah do not travel through Mecca. SAPTCO transported approximately 4.1 million pilgrims during the *Hajj* of 2004.

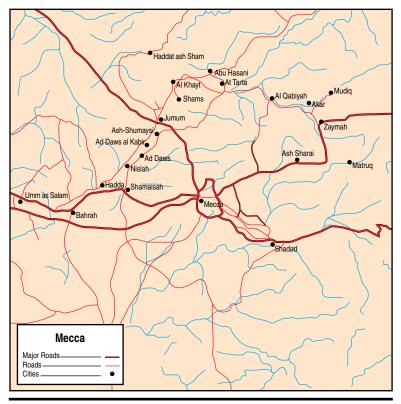
Rail

Saudi Arabia has 1,400 kilometers (870 miles) of railroad (all 1.435-meter [4.7-foot] standard gauge). Railroads remain relatively undeveloped in comparison with other means of transport in the country; the difficult terrain makes laying track very costly. The most significant railroad runs 570 kilometers (350 miles) between Riyadh and Ad-Dammam, via Al-Hufuf and Abqaiq, linking the capital with a significant port and industrial city.

The Saudi Railways Organization (SRO), which oversees the railroad network, is planning three new lines. The Saudi Land Bridge Project will connect Jiddah on the Red Sea to Ad-Dammam on the Gulf. Several major cities (Jiddah, Riyadh, Ad-Dammam, and Jubail) and ports will be linked via the new railway. It will primarily serve as a freight line to save significant time compared to shipping by sea. The Mecca-Medina Rail Link will carry passengers for the annual pilgrimage, linking Jiddah, Mecca, Medina, and Yanbu. It will carry 2.5 million pilgrims during the Hajj period. The third line will connect Jubail, Riyadh, and Hazm al-Jalamid. Together, the lines will add 3,000 kilometers (1,860 miles) to the railroad network. Two of the lines will be transferred to private ownership.

Air

Saudi Arabia relies heavily on air transportation because of its large size. The national airline, Saudi, was established in 1945 with a fleet of three DC-3s. In 1996, Saudi changed its name to Saudi Arabian Airlines (SAA). It is the largest airline in the Middle East. Privatization of airline services is underway. SAA's domestic flights serve cities daily throughout the kingdom, and its international flights serve destinations in the Middle East, Asia, Africa, Europe, and North America. SAA carried 16 million passengers in 2005.



Mecca, Saudi Arabia

Saudi Arabia has three international airports. King Abdul Aziz International Airport in Jiddah has special facilities for handling the annual influx of Muslim pilgrims performing the Hajj. Expansion began in 2006; the terminal is expected to more than double passenger capacity from 10.5 million in 2006 to 25 million in 2010. King Fahd International Airport, completed in 1999, is the newest international airport. It is located in Ad-Dammam. At 780 square kilometers (301 square miles), it is the largest airport in the world

by area, and slightly larger than the neighboring country of Bahrain. King Abdul Aziz and King Fahd international airports handle about 75 percent of passenger traffic, estimated at 24 million people in 2004. King Khalid International Airport in the capital city of Riyadh is the third international airport. It was designed to accommodate 12 million domestic and international passengers annually. There are 23 other airports for domestic flights.

Primary Airports

Airport Name, City Coordinates	Coordinates	Runway		Elevation
	Coordinates	Dimensions m (ft)	Surface	m (ft)
Abha	1814N 04239E	3,350 x 45 (10,991 x 148)	Asphalt	2,090 (6,857)
Al-Baha	2017N 04138E	3,350 x 45 (10,991 x 148)	Asphalt	1,672 (5,486)
Al-Hasa	2517N 04653E	3,060 x 45 (10,039 x 148)	Asphalt	179 (587)
Al-Jouf	2947N 04006E	3,661 x 45 (12,011 x 148)	Asphalt	689 (2,260)



Terminal of the King Khalid International Airport

Airport Name, City	Coordinates	Runway		Elevation
Airport Name, City	Coordinates	Dimensions m (ft)	Surface	m (ft)
Arar	3054N 04108E	3,050 x 45 (10,007 x 148)	Asphalt	553 (1,814)
At-Taif	2129N 04032E	3,735 x 45 (12,254 x 148)	Asphalt	1,478 (4,849)
Bisha	1959N 04237E	3,050 x 45 (10,007 x 148)	Asphalt	1,185 (3,888)
Gassim	2618N 04346E	3,000 x 45 (9,843 x 147)	Asphalt	648 (2,126)
Gurayat	3124N 03716E	3,050 x 45 (10,007 x 148)	Asphalt	510 (1,673)
Hail	2726N 04141E	3,720 x 45 (12,204 x 148)	Asphalt	1,015 (3,330)
King Abdul Aziz International, Jiddah	2140N 03909E	3,299 x 60 (10,825 x 197)	Concrete	15 (49)
King Abdullah bin Abdul Aziz, Jizan	1654N 04235E	3,050 x 45 (10,006 x 148)	Asphalt	6 (20)
King Fahd International Airport, Ad-Dammam	2628N 04947E	4,000 x 60 (13,124 x 197)	Asphalt	22 (72)
King Khalid International, Riyadh	2457N 04641E	4,205 x 60 (13,796 x 197)	Asphalt	625 (2,051)
KKMC Hafr Al-Batin	2754N 04531E	3,659 x 45 (12,005 x 148)	Asphalt	412 (1,352)
Najran	1736N 04425E	3,050 x 45 (10,007 x 148)	Asphalt	1214 (3,983)
Prince Mohammad bin Abdul Aziz, Medina	2433N 03942E	4,008 x 45 (13,149 x 147)	Asphalt	656 (2,152)
Prince Salman bin Abdul Aziz, Ad-Dawadmi	2426N 04407E	3,050 x 45 (10,006 x 148)	Asphalt	922 (3,025)
Qaisumah, Hafr Al-Batin	2820N 04607E	3,000 x 45 (9,843 x 148)	Asphalt	358 (1,175)
Rafha	2937N 04329E	3,000 x 45 (9,834 x 148)	Asphalt	449 (1,473)
Sharorah	1728N 04707E	3,650 x 45 (11,975 x 148)	Asphalt	720 (2,362)
Tabuk	2821N 03637E	3,350 x 45 (10,991 x 148)	Asphalt	778 (2,552)
Turaif	3141N 03843E	3,000 x 45 (9,843 x 148)	Asphalt	854 (2,802)
Wadi Al Dawasir	2030N 04511E	3,050 x 45 (10,007 x 148)	Asphalt	628 (2,060)
Wedjh	2611N 03628E	3,050 x 45 (10,007 x 148)	Asphalt	20 (66)
Yanbu	2408N 03803W	3,210 x 45 (10,532 x 148)	Asphalt	8 (26)

Maritime

Saudi Arabia has the largest and most diversified economy in the Middle East and is the world's primary oil exporting country. There are six major commercial ports—Jiddah, Ad-Dammam, Jizan, Jubail, Yanbu, and Dhiba—and two specialized industrial ports at Jubail and Yanbu. There are 22 ports including the minor ports. Ninety-five percent of Saudi imports and exports pass through the kingdom's seaports, and 70 percent of the cargo handled is exported. There are 183 mechanized and organized berths. Since 1986, Saudi ports have handled more than 1,300 million tons of cargo. Twelve thousand ships visit Saudi ports annually.

The industrial ports at Jubail and Yanbu are the busiest, accounting for more than 50 percent of the total exports and imports. The Saudi Ports Authority gives high priority to passenger services, especially for pilgrims. It has constructed two fully equipped ter-



Cargo Vessel

minals in Jiddah Islamic Port and the port of Dhiba. More than 1 million passengers pass through these two ports each year. In 1997, the operation, maintenance, and management of docks and equipment were transferred to the private sector.

Port Name, City	Coordinates	Anchor Depth	Pier Depth	Berthing
Jiddah Islamic Port,	2128N 03910E	9.4 to 10.7 m	6.4 to 7.6 m	Vessels more than
Jiddah		(31 to 35 ft)	(21 to 25 ft)	152 m (500 ft) long
King Abdul Aziz Port,	2630N 05012E	6.4 to 7.6 m	6.4 to 7.6 m	Vessels more than
Ad-Dammam		(21 to 25 ft)	(21 to 25 ft)	152 m (500 ft) long
Commercial Port,	1654N 04229E	12.5 to 13.7 m	6.4 to 7.6 m	Vessels more than
Jizan		(41 to 45 ft)	(21 to 25 ft)	152 m (500 ft) long
Commercial Port,	0271N 04942E	23.2 m and over	11 to 12.2 m	Vessels up to 152 m
Jubail		(76 ft and over)	(35 to 40 ft)	(500 ft) long
Commercial Port,	0245N 00383E	7.9 to 9.1 m	9.4 to 10.7 m	Vessels up to 152 m
Yanbu		(26 to 30 ft)	(31 to 35 ft)	(500 ft) long
Commercial Port, Dhiba	2733N 03531E	N/A	N/A	Vessels more than 152 m (500 ft) long
King Fahd Industrial Port, Jubail	0275N 04941E	23.2 m and over (76 ft and over)	7.9 to 9.1 m (26 to 30 ft)	Vessels up to 152 m (500 ft) long
King Fahd Industrial	2357N 03813E	23.2 m and over	14 to 15.2 m	Vessels up to 152 m
Port, Yanbu		(76 ft and over)	(46 to 50 ft)	(500 ft) long

Communication

Radio and Television

The government owns and operates the radio and television companies, which are overseen by the Ministry of Culture and Information. There has been an increase in the number of FM radio and satellite television stations in the Arab world. Radio stations are adopting more variety in content including entertainment, music, and cultural programs. Privatization of some radio stations is underway. The Ministry received 20 applications for the grant of licenses to private investors to open up radio stations in 2006.

Major Stations Programming

BBC Arabic Service News

Saudi Radio Quran Religious

KACST – Holy Quran Religious Live Radio MBC FM News, Entertainment

Radio Al Sawa Arabic and Western Music, News

Radio Dal Religious

Saudi Radio Program 1 News Saudi Radio Program 2 News

Saudi Radio European News, Varied, Classical

Broadcast

Saudi Multilanguage Radio 1 Discussion, Varied Saudi Multilanguage Radio 2 Discussion, Varied

The state-run Broadcasting Service of the Kingdom of Saudi Arabia (BSKSA) is responsible for all television broadcasting and operates four television networks, including news channel Al-Ikhbariya. Launched in 2004, it was the first Saudi state-owned television network to feature women anchors; it covers local and international news, broadcasts hourly news bulletins, and includes live debate. There is also a sports channel. The other two channels, one in Arabic and one in English, offer religious and cultural programs, entertainment and music, Arabic drama programs, non-Arabic films and serials, children's programs, and news and current affairs programs, all censored. Special programming is produced for major events in the Islamic calendar, especially for Ramadan and the Hajj.

Private television stations cannot operate in Saudi Arabia, but the country is a major market for satellite and pay-TV broadcasters. Saudi investors fund some of these networks, including Dubai-based MBC and Bahrain-based Orbit. Satellite television and the

Internet are making the authorities' ability to control what Saudi citizens see and read more difficult. Along with exposure to news from outside sources, citizens are exposed to different ways of life, which is transforming Saudi society. Satellite television is illegal in the kingdom, but it is widely watched. According to a June 2003 Zogby International poll, 91 percent of Saudis watch satellite television.

Telecommunication

Telephone service has not kept up with demand, which has been boosted by a fast growing population and Internet development. The business sector needs better services such as video conferencing, ISDN lines, and wireless Internet access, which the Saudi Telecommunications Company (STC) has been unable to deliver except at very high costs.

The government has taken steps to improve the telecommunications sector, including reorganizing the state monopoly provider, STC, into a commercial firm between 1998 and 2002. During that time, there was a 74 percent increase in fixed-line subscribers (for a total of 3.3 million), 706 percent increase in mobile subscribers (for a total of 2.5 million), and a 60 percent growth in revenues and 145 percent growth in net income. STC reached a milestone 11 million mobile subscribers early in 2005. The government has granted licenses to both the land line and mobile telephone private-sector competition.

Saudi Arabia Telecommunication Statistics 2006

Total telephone subscribers	17.1 million
Main telephone lines	4.5 million
Mobile users	19.6 million

Internet

Internet service first became available in Saudi Arabia in 1999. Internet use is still relatively modest in the kingdom. With the exception of Oman, Saudi Arabia has the lowest Internet usage rate of the six Arabian Gulf states. Although the ratio of Saudi Internet account holders to population (only 0.5 per 1,000 people in 2001) compares poorly with the ratio of 24.7 to 1,000 in the United Arab Emirates, the sharing of facilities allows for a higher proportion of actual Internet users. Online access charges are steep, while poor fixed-line infrastructure means that more than 50 percent of people who apply for asymmetric digital subscriber line (ADSL) broadband services are rejected because they live more than 5 kilometers (3 miles) from the nearest STC exchange.

Internet access is channeled through the Internet Services Unit at the King Abdul Aziz City for Science and Technology (KACST), which monitors all Internet traffic and blocks sites considered inappropriate. There were 200,000 banned web sites in 2001 and 400,000 in 2004. It is unlikely that KACST restrictions will be relaxed; the government plans to expand the system and improve its management. Despite the controls, many Saudi Internet users have been able to access blocked sites through alternate servers.

Saudi Arabia Internet Statistics 2007

Total Internet Hosts	18,369
Users	4.7 million
Total number of personal computers (PCs)	8.5 million

Newspapers and Magazines

Newspapers are privately owned, but the government controls what may be published; the Ministry of Information regularly

distributes guidelines and has the power to appoint and dismiss editors. Newspapers tend to follow the lead of the state-run news agency on whether or not to publish stories on sensitive subjects. Journalists censor their own stories, knowing that the government, the royal family, or Islam cannot be criticized. However, citing the influence of satellite television and the Internet, journalists claim that the media has undergone significant changes since 11 September 2001 when newspapers began to address social problems and religious extremism.

International editions of magazines such as *Time*, *Newsweek*, and the *Economist* reach newsstands a few days late, by which time they, and all other foreign publications, are heavily censored. *The International Herald Tribune*, *London Times*, and *USA Today* have been subjected to the Saudi censors' scissors and black markers before being sold in Riyadh. Two locally published English newspapers (*Arab News* and *Saudi Gazette*) are available in Riyadh.

Publication Politics; Frequency; Language; Web Address

Dar Al-Hayat Alternative perspective (Lebanon); Daily;

Arabic, English;

english.daralhayat.com

Al-Jazirah Pro-government; Daily; Arabic;

www.al-jazirah.com

Al-Riyadh Pro-government; Daily; Arabic;

www.alriyadh.com

Asharq Al- Objective and impartial (London); Daily;

Awsat Arabic, English;

www.asharq-e.com

Publication Politics; Frequency; Language; Web Address

Okaz Pro-government; Daily; Arabic;

www.okaz.com.sa/okaz/osf/20060717/index.htm

Al-Watan Pro-government; Daily; Arabic;

www.alwatan.com.sa/daily/2006-07-17/index.htm

Arab News Pro-government; Daily; English;

www.arabnews.com

Saudi Gazette Business; Daily; English;

www.saudigazette.com.sa

Postal Service

The postal service is one of the sectors the government has opened to competition and investment. The postal offices receive all incoming and outgoing parcels. The postal network covers all of the cities and villages in the kingdom, with 477 main and 185 branch post offices. Poste Restante, or mail to be held at the post office for pickup by the recipient, is usually not offered. Hours are 0830 to 1300 and 1700 to 2100 Saturday through Thursday.

Postcards to outside the Gulf are SR1.50 (US\$0.40) and letters up to 10 grams (0.35 ounces) are SR2.00 (US\$0.53). Parcels by land mail cost: SR5 (US\$1.33) for up to 1 kilogram (2.2 pounds), SR10 (US\$2.67) for up to 5 kilograms (11 pounds), and SR15 (US\$4.00) for more than 5 kilograms and up to 10 kilograms (22 pounds). Ten Riyals are added for each kilogram sent by airmail. Express Mail Service guarantees delivery in the kingdom on the same day and on the next day in neighboring countries.

Satellites

Saudi Arabia has seven satellite earth stations (five Intelsat, one Arabsat, and one Inmarsat). Submarine cables complement Saudi Arabia's wire and satellite network, making the country an international hub for communications.

CULTURE

Statistics (2007)

Population	27,600,000
Age 14 or younger	38.2%
Ages 14 to 64	59.4%
Foreign nationals	2.4%
Density	12.6 persons per square kilometer
	(32.6 per square mile)
Growth rate	2.06%
Average births per woman	3.94

More than 50 percent of the Saudi population lives within 50 kilometers (30 miles) of the coastline, which is also where oil refineries, processing plants, and desalination plants are located. The 2004 census showed that more than 78 percent of the population lived in 5 administrative regions: Mecca (26 percent), Riyadh (24 percent), Eastern Province (15 percent), Asir (7.5 percent), and Medina (6.7 percent); about 88 percent of the population lives in urban areas.

Ethnic Density

Ninety percent of Saudi Arabians are Arabs; the remaining 10 percent are Afro-Asians, who are descendants of settlers from throughout the Islamic community. Saudi nomads are "pure" Arabs or de-

scend from pure Arabs. Many of those of mixed ethnic origin are descended from Africans, Turks, Iranians, Indonesians, or Indians, most of whom immigrated as pilgrims to the holy cities of Mecca and Medina and live in the Hejaz region near the Red Sea coast.

More than one-fifth of the population is composed of foreign workers. There are many foreign-born Arabs, mainly from Bahrain, Egypt, Jordan, Lebanon, Palestine, Syria, and Yemen. There are also increasing numbers of non-Arab Muslims, such as Pakistanis, and large numbers of non-Muslims from Korea and the Philippines, who are hired in group contracts. Most are service sector workers who are not integrated into Saudi society. Europeans and Americans are among specialized technical workers, but fewer than 100,000 Westerners live in Saudi Arabia.

Society

Islam governs all aspects of Saudi life. Muslims believe The Qur'an (Islamic holy book) is the basis for all behavior and is strictly enforced through *Shari'a* (Islamic law). The Saudi form of Islam, *Wahhabism*, was named after its founder, Muhammad bin Abdul Wahhab, and adheres to the strictest interpretation of Islam. Daily prayers are mandatory, and offices close during the five prayer times. Non-Muslims are not allowed to enter Mecca or Medina, the two holiest cities of Islam. Muslims are not allowed to drink alcohol or eat pork. There are no movie theaters. Non-Muslims working in the country are bound by the same rules and allowed to practice their own religions only in private.

Men and women who are not related or do not know each other do not socialize. Schools are segregated, as are most workplaces, and women must be accompanied in most places by a male family member. Women are not allowed to drive or attend sporting events. Many Saudi homes have guest rooms called *diwaniyah* or *majlis*. These are usually for male guests; female guests meet in another room.

Most Saudis are middle class, although top management jobs are often held by Saudi princes. Saudi nationals work mainly in the service and trade sectors such as transportation and communication, although the government is training nationals for skilled work. The rapid growth of the economy and shortage of skilled workers has led to many foreign workers in the work force. Although discrimination is illegal, the nearly 6 million foreign workers from Asia and Africa are subjected to formal and informal discrimination and have difficulty obtaining justice.

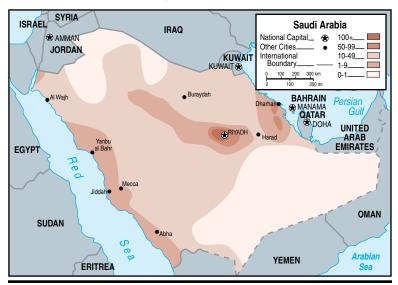
Saudi Arabia's oil wealth has allowed it to build a strong and technologically advanced infrastructure. All citizens have access to free health care and education. There are shopping malls, restaurants, amusement parks, and excellent roads.

Music and dance have been a part of Saudi Arabian culture since ancient times. The *al-ardha* (sword dance) is the national dance of Saudi Arabia; men with swords stand shoulder to shoulder while a poet sings verses, and drummers beat a rhythm. The *al-mizmar* is a traditional dance and song performed in Mecca and Medina that features the music of the *mizmar*, a woodwind instrument similar to the oboe. Drums are common in Saudi music; the two most popular are the *al kassir* and *al rahmani*. Other instruments include the *nay*, a long wooden pipe; the *oud*, a string instrument similar to a lute; the *rababah*, a fiddle with a string bow; and the tambourine. Women also have their own traditional folk dances and songs and often entertain at wedding parties; the *al-na'ish*, or hair toss, is the popular dance move where women swing their long, loose hair from side to side and around their heads as they hop in time to music.

People

All Saudis are ethnic Arabs and adhere to Wahhabism. They consider ancient bloodlines very important, especially the distinction between the Adnan and Qahtan bloodlines, which are believed to be the two main bloodlines in post-Muhammad Saudi Arabia. Adnan descendants are traditionally identified as southern Arabs, while Qahtan descendants are classified as northern Arabs.

For centuries, a fundamental distinction was made between urban Arabs, who lived in Mecca, Medina, or another city, and Bedouins, who led a nomadic agrarian lifestyle. Today, Bedouins make up less than 10 percent of the population and are decreasing. Bedouin comes from the Arabic word *Bedawi*, meaning "the ones who live in the desert." Traditionally, Bedouins lived in tents and roamed



Population

the land looking for grazing pasture for their camels. Animals provided for most needs including food, clothing, and transport.

Many Bedouins have left the desert existence for life and work in urban areas. This is especially true of the young. Those who choose to stay in the desert have largely traded in camels for cars and four-wheel drive vehicles.

Ethnic Groups

The Saudi population is 90 percent Arab and 10 percent Afro-Asian. There is a large community of expatriate workers from Africa, Asia, and other Arab states.

Family

Saudis inherit their religion, social class, and culture through their family, which is the center of all social and economic activity. Families tend to be large with an average of four children. The father is considered head of the household and provides for all basic needs. Mothers raise children and run the household. Few women work outside of the home. Daughters live at home until they marry. Sons may live at home until they marry and often one son will remain living in the parents' home even after marriage to look after his parents. Other family members usually live close by.

Roles of Men and Women

Separation of men and women is the standard in Saudi Arabia. Rules governing a woman's behavior are very different from those for men and are based on protecting one's honor. A woman's actions reflect on her entire family. A woman does not socialize with men in public and is usually accompanied by a male relative.

Men and women live relatively separate lives; men are *janna* (providers) and women are *banna* (homemakers). Fathers have ultimate authority and responsibility, although the mother raises and disciplines the children. The Qur'an gives women economic and social rights including the right to inherit and bequeath property and retain wealth in their own names even after marriage.

Women have begun to work outside the home. While many jobs are open only to men, including political, ministerial, diplomatic, high-level management, and fieldwork, the fields of education and medicine have opened to women.

Rites of Passage

Five rites are performed when a Muslim child is born. The father holds the baby and whispers the *adhan* (call to prayer) in the left ear and the *iqamah* (command to worship) in the right ear. This is done to set the child on the right path. The *tahnik* (literally meaning jawing) ensures that the first thing the baby tastes is sweet by rubbing a small piece of crushed date, sugar, or juice on the gums. On the seventh day after birth, the baby's head is shaved to represent service to Allah. The hair is weighed, and an equivalent weight in either silver or gold is given to charity. Muslim boys undergo *khitan* (circumcision) on the seventh day, although this may be done any time before puberty. A name is typically chosen on the seventh day, and an *aqiqah* (feast) is held to give thanks for the gift of a child. Animals are sacrificed and the meat is cooked and eaten with some being given to the poor. Chosen names are usually those of the family or a prophet's family.

Children are taught to read the Qur'an at an early age. The *bismillah* (reciting of the Qur'an) is held on the fourth birthday when a child learns his first lesson by heart.

Dating does not exist in Saudi Arabia, because of the separation of men and women. Muslims often have arranged marriages, which are negotiated between the parents of the prospective bride and groom, although the children must agree to the match. The woman does not change her name. Although a man may have as many as four wives, most Saudis have only one. The law requires that a man have the consent of his wife or wives before he takes another wife, and he must be able to support each wife equally.

The wedding ceremony is simple. The bride does not have to attend if witnesses are present. After the ceremony, there is a *walima* (party) for family and friends, and the men celebrate separately from the women.

Before a Muslim dies, the call to prayer should be whispered into a person's ear just as it was at birth. Immediately after death, there is a ritual washing of the *ghusl* (body) after which it is rubbed with perfumes and spices. It is then wrapped in white cloth and buried without a coffin with the face turned towards Kab'ah in Mecca. Bodies are not cremated because Muslims believe that the soul waits in the *barzakh* (transitional world) for judgment day and that it will be placed back in the body. Muslims are buried as quickly as possible, often before sundown on the same day.

Funeral prayers are performed by mourners in the mosque and the body is carried to its final resting place. Litanies are recited for several days afterwards in remembrance.

Education and Literacy

All education in Saudi Arabia is tuition-free. All levels emphasize religious education and Arabic language studies. The literacy rate for men and women in 2003 was 84.7 percent and 70.8 percent respectively, with an overall literacy rate of 78.8 percent. Educa-

tion in Saudi Arabia is managed by four authorities: the Ministry of Education, the Presidency General for Girls' Education, the Ministry of Higher Education, and the General Organization for Technical Education and Vocational Training.

The Ministry of Education manages teacher training, special education, and adult education and literacy for men. The Presidency General for Girls' Education manages teacher training, colleges, adult education and literacy, and vocational education and training for girls. The Ministry of Higher Education manages universities, and the General Organization for Technical Education and Vocational Training supervises programs aimed at manpower development.

Children enter the educational system at age 6 and spend 6 years in primary school. Boys and girls are educated separately. The school year begins in September and ends in June. Students must pass an exam at the end of the sixth grade to receive an elementary education certificate and continue on to intermediate school. Intermediate school lasts 3 years (from age 12 to 15), and general secondary studies last another 3 years (from age 15 to 18). Students can choose between general and technical programs. Technical education includes industrial, commercial, and agricultural studies. There are also 2-year vocational programs in architecture, construction, health, roads, surveying, and water supervision that lead to certificates of technical assistance. Health institutes and nursing schools offer 3-year programs leading to a certificate of technical nursing.

Students who complete secondary studies may continue at a university or other post secondary school. Higher education programs in the humanities and social sciences are 4 years long, and programs in medicine, pharmacy, or engineering last 5 to 6 years. All programs result in a bachelor's degree. All teachers must have

a 4-year college degree with the exception of kindergarten teachers who complete a 3-year program and girls' elementary school teachers who complete a 4-year post secondary program at an intermediate education college.

Students who complete a bachelor's degree may continue on for a master's degree, which requires 2 years of additional study and a dissertation. A doctoral degree requires 3 years of study after a master's degree and another dissertation. As of 2004, there were 200,000 students at Saudi colleges and universities. More than half of these were women at five universities: King Saud University, King Abdul Aziz University, King Faisal University, Imam Muhammad bin Saud, and Umm Al Qura universities. Most universities accept men and women, but some, like the University of Petroleum and Minerals and the Islamic University, accept only men.

Language

Arabic is the only official language, although English is taught in school and is used in business.

Religion

Saudi Arabia is the birthplace of Islam; Islam is the only recognized religion and the only religion that may be openly practiced. Islam is a political system as well as a religious one. It is the source of the government's legitimacy; the king upholds and is subject to the precepts of Islam. Muslims believe that *Allah* (God) revealed himself to Muhammad during the 7th century and "there is no god but God, and Muhammad is the messenger of God." The revelations revealed to Muhammad are recorded in the holy Quran, the holy book of Islam. Muslims believe that all rules of belief and conduct come from God through the prophet Muhammad.

The five pillars of Islam include going to Mecca (the *hajj*) during one's lifetime, *shahada* (professing one's belief in Allah as the only god), reciting the *salah* (five daily prayers), *zakat* (giving a percentage of one's income to the poor), and *sawm* (fasting during the month of Ramadan).

Religious freedom is denied to all except those that practice the state-sanctioned Wahhabi interpretation of Sunni Islam. Conversion to another religion is a crime. The minority Shi'a Muslim community is subject to officially sanctioned political and economic discrimination; their religious practices are restricted and their mosques are regulated by the government. Other religions in Saudi Arabia, largely practiced by the foreign nationals who work and live in the country, include Hinduism and Christianity. Public worship of these



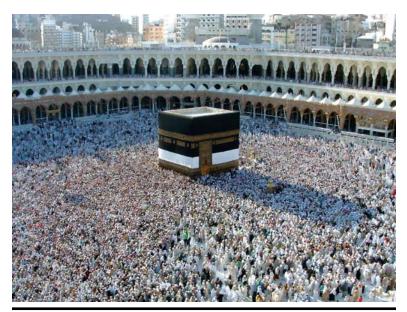
Qur'an Photo by Mira Pavlakovic

religions is prohibited by law. Although the government publicly states that members of other religions have the right to worship in private, that right is not respected in practice. There is a lack of clarity as to what constitutes private worship, and non-Muslims are often harassed or arrested by the *Mutawwa'in* (religious police).

Sunni Islam. Sunni and Shi'a Islam disagree on the true successor to the Prophet Muhammad. Rather than believing that succession should be hereditary, Sunni Muslims believe that Muhammad died without establishing a system for selecting a successor or designating a replacement. Therefore, Sunni Islam holds that leadership of the Muslim community should be passed to the most qualified Muslim, not necessarily to a relative of the Prophet. Furthermore, because Sunni Muslims do not recognize a need for a priesthood to mediate the faith to the community of believers, there is no "church" and no liturgy.



Masjid Nabawi (Mosque of the Prophet)



Hajj Pilgrimage in Mecca

Shi'a Islam: The Shi'a minority (consisting of roughly 2 million people) lives primarily in the eastern region of Saudi Arabia, and its religious beliefs and practices are frowned on by the Saudi government and the Sunni majority. They are distinguished from Sunni Muslims by their beliefs regarding the true successor to the Prophet Muhammad. Shi'ites believe that after the death of the Prophet Muhammad, leadership of the Muslim community should be hereditary, passing to relatives of the Prophet Muhammad.

Recreation

Only men are allowed to watch or take part in sports in Saudi Arabia. Soccer is the national sport but many enjoy volleyball, basketball, swimming, and roller skating. Falconry, an old and



Central Mosque in the Al-Bathaa Section of Riyadh

very traditional sport involving the use of trained birds to hunt for small game, is very popular. Horse and camel racing are also very popular, although betting is illegal. The Arabian horse is a well known and sought after breed that dates back 5,000 years. Camel racing began with the Bedouin tribes and has evolved into a world famous race held annually at Riyadh Stadium. The King's Camel Race started in 1974 and attracts between 20,000 and 30,000 spectators, who watch more than 2,000 camels and riders compete during the national Heritage and Culture Festival at Jenadriyah.

The Asir National Park in the southwest along the Red Sea has 1.1 million acres for hiking, camping, hill climbing, and other outdoor activities. The Al-Khunfah Preserve, in the northwest, allows visitors views of wildlife in its natural habitat.

Wind surfing, sailing, water skiing, scuba diving, snorkeling, and deep-sea fishing are popular along the coast. The Red Sea and Arabian Gulf are home to some of the world's most beautiful living coral reefs.

Saudi women enjoy visiting with family members, shopping, going to museums or parks, and doing volunteer work.

Customs and Courtesies

Saudis are private and conservative. Public displays of affection are not acceptable. Houses are surrounded by high walls so as not to be seen from the street or by neighbors, but Saudis are very welcoming to strangers. Guests are honored with large meals. Either coffee or tea is always offered, and it is polite to accept at least one cup. In a business setting, no business is discussed until coffee or tea has been served; haste is considered rude.

Invitations to Saudi homes are rare and generally extended only to men. If wives are invited, they may be seated with other women in a separate room. When one visits a private home, dress should be conservative and shoes should generally be removed. It is important to arrive on time. Elders are usually greeted first. The standard greeting is *Ahlan wa sahlan* (welcome). A small gift is appropriate as a thank you when invited to a home; men should not give women flowers. One should not admire items within the home or the host will feel obligated to offer it as a gift, even if it is of value.

Saudis believe in "saving face." Allowing someone to save face is considered highly ethical.

Saudis avoid conflict and are sensitive to others' dignity and self-respect; causing someone embarrassment or discomfort is frowned upon.

In general, avoid alcohol; it is illegal. Do not walk on a prayer mat or in front of anyone who is praying. Never enter a mosque without asking permission, and never try to enter Mecca or Medina as a non-Muslim. Waving a finger at anyone is considered impolite. Shouting or other displays of anger or aggression are not acceptable. Do not eat, drink, or smoke in the daylight hours during Ramadan out of respect for Muslims, who are not allowed to do so.

Greetings

Saudi Muslims greet with a handshake and the phrase *As-Salaamu 'alaikum* (peace be with you). The correct reply is *Wa alaikum assalam* (and upon you be peace). It is customary to greet and depart from each individual in a meeting with a handshake. After a handshake, it is normal to inquire about the host's family and children. Never ask directly about wives or daughters. Depending on the relationship between individuals, men might also kiss each other on the cheek; this is usually reserved for close friends and family. Women wearing a veil are generally not introduced and will not shake hands. If a Saudi woman extends her hand, a shake is appropriate; otherwise only a verbal greeting is necessary.

Business colleagues call each other by their first name, although in many cases the title *abu* (father of) is used with the first name of the person's son. Many Saudi names include *bin* (son of) because Saudi names indicate genealogy. People with doctoral degrees often prefer to be addressed as "doctor" followed by the first or last name. Members of the royal family are addressed as "Your Highness." "Sheikh" is an honorary title used only with the first name. Government ministers are addressed as "Your Excellency," although this can vary by region, and it is important to check before meeting with dignitaries.

A general form of address is *Sayyed* (sir) for a man and *Sayeeda* (madam) for a woman followed by the full name. Saudi women may also be addressed as Madame.

Gestures

Almost every action is conducted with the right hand in Saudi Arabia. The left hand is considered unclean. Always pass items with the right hand or with both hands but never with the left hand alone. It is impolite to point the sole of the foot or a finger at anyone. It is also considered rude to cross an ankle over a knee, although crossing legs at the knees is acceptable.

Pointing the middle finger up or down is considered a rude gesture and is done by someone of a lower social class. Nodding the head up and down means yes. Shaking the head left to right means no. In general, contact should not be made with the opposite sex. It is not unusual, however, to see people of the same sex holding hands. This is considered a sign of friendship and respect. Prolonged eye contact with someone of the opposite gender should be avoided since it can be misinterpreted as an invitation.

Cultural Considerations

Dress Standards

Saudi clothing is traditionally made of five types of cloth: cotton, wool, camelhair, linen, and silk. Men traditionally wear a loose-fitting, full-length garment with long sleeves called a *thobe*. *Thobes* are typically white and made of cotton. Winter *thobes* are usually made of wool and are made in darker colors. A *sirwal* or white pant with a draw-string waist is worn under the *thobe* and can be short or full length.

The men's headdress consists of the *taqiyah*, *ghutra*, and *agal*. The *tagiyah* is a small, white cap that is worn directly on the head. The *ghutra* is a square cotton scarf that is folded into a triangle and placed over the *tagiyah* with the fold in front. It is either white or red and white checked and is held in place by the *igal*, a doubled black cord. *Igals* are made of woven black goat's hair or sheep's wool. When boys reach puberty, they wear the headdress as a sign of manhood.

A *bisht is* a loose cotton or wool robe that is worn over the *thobe* and is usually used on special occasions such as weddings. It is typically trimmed with gold embroidery and comes in many colors. The right side of the *bisht* is tucked under the left arm. Many Saudi men wear *madas*, leather sandals that come in many styles, although European-style shoes are common.

Women are not permitted to appear outdoors with hair, wrists, or ankles exposed. All women wear an *abaya* over their clothes when going outside; it is not uncommon for them to wear colorful designer fashions under the *abaya*. The *abaya* is a full-length gown with long sleeves. Traditionally, it is black but comes in other colors and may be embroidered with thread and beads, crystals, or sequins. All women cover their hair with a *tarha*, or lightweight black gauze scarf. The most common facial covering is a plain gauze veil, but in some areas women wear a *burqa*, a mask which leaves the forehead bare, and has openings for the eyes.

In general, travelers to Saudi Arabia should dress conservatively. Men should wear long pants and shirts that cover the upper body. Women should wear long (below the knee), loose-fitting skirts and shirts or blouses with at least elbow-length sleeves and a high neckline.

Food

Most Saudis eat with the right hand. For most, the main meal of the day is mid-afternoon or evening depending on one's work schedule. Meals are eaten while sitting on the floor around a cloth *sufrah* and include mainly rice with mildly spicy lamb or chicken. Common spices include cardamom, cloves, tamarind, saffron, sumac, *shaybah* (a tree lichen known as old man's beard), cinnamon, and dried limes. Muslims do not eat pork.

Kabsah (rice and meat) is a nationwide favorite. Rice is also commonly served with either vegetables or a green salad, and dessert is usually fruit (mainly dates). Seafood is common on the coast and usually includes fish such as *chan'ad* (Spanish mackerel), *sha'ari* (spangled emperors), tuna, and *hamour* (brown-spotted grouper).

Buttermilk and camel's milk are popular drinks along with fruit drinks and sweet mint tea.

Coffee is always served before meals in small cups without handles. Cardamom, either crushed or whole pods, is added to Saudi coffee, which gives it a distinctive flavor and aids digestion.

A good guest will not take more than three servings and will indicate that he is done by shaking the empty cup side-to-side.

Eating begins after washing the hands and saying *Bismillah* (in the name of God). It is customary to say *Alhamdulilah* (Thanks be to God) when you have finished eating and to wash the hands and mouth. Saying *An'am Allah alaikum kather Allah kherkum* after the meal shows that the meal was enjoyed by asking Allah to be generous to the host. For parties where not all guests are family members, men and women are segregated with two separate parties going on at the same time. Children are allowed at either party. It is polite to try as many dishes as possible.

Interpersonal Relations

Creating trust is important to Saudis. Decisions are based on consensus rather than a judgment of advantages or disadvantages. They prefer to work with people they know and trust and take a lot of time with small talk before business meetings to set the atmosphere. There may be several meetings before contracts are signed or business is finished. While appointments are necessary,

it is not unusual for meetings to be late or cancelled. Saudis prefer to not set appointments with foreigners until they have arrived in the country. Meetings may also be interrupted for several reasons including prayer times. Patience is essential. Decisions are made slowly and often require more than one round of approvals. Dressing conservatively and well will make a good impression, as will learning some of the common phrases and using them correctly.

MEDICAL ASSESSMENT

Disease Risks to Deployed Personnel

The Armed Forces Medical Intelligence Center (AFMIC) assesses Saudi Arabia as Intermediate Risk for infectious diseases, with an overall disease risk that will adversely impact mission effectiveness unless force health protection measures are implemented.

The following is a summary of the infectious disease risks in Saudi Arabia. Risk varies greatly depending on location, individual exposures, and other factors. More detailed information is contained on line at: http://www.afmic.detrick.army.mil.

Food- or Waterborne Diseases

Sanitation varies with location, but typically is below U.S. standards. Local food and water sources (including ice) may be contaminated with pathogenic bacteria, parasites, and viruses to which most U.S. service members have little or no natural immunity. Diarrheal diseases can be expected to temporarily incapacitate a high percentage of personnel within days if local food, water, or ice is consumed. Hepatitis A can cause prolonged illness in a smaller percentage of unvaccinated personnel. In addition, though not specifically assessed in this document, viral gastroenteritis (e.g.,

norovirus) and food poisoning (e.g., *Bacillus cereus*, *Clostridium perfringens*, *Staphylococcus*) may cause significant outbreaks.

Vector-borne Diseases

Vector-borne disease transmission occurs year-round. Ecological conditions support populations of arthropod vectors, including mosquitoes, ticks, and sand flies, with variable rates of disease transmission. Conditions are most favorable following rainy periods, particularly in western and southwestern areas. Vector activity is reduced during very hot conditions. Arid regions have lower vector-borne disease risk. A variety of vector-borne diseases occur at low or unknown levels. Individually, these diseases are likely to affect only a small percentage of personnel. However, the combined risk may be higher. Malaria is a risk only in limited areas of western and southwestern Saudi Arabia. In addition, Rift Valley fever has become endemic in the southwestern region, and could become a significant risk under favorable conditions.

Water-contact Diseases

Tactical operations or recreational activities that involve extensive contact with surface water such as lakes, streams, rivers, or flooded fields may result in significant exposure to leptospirosis and schistosomiasis. Arid portions of Saudi Arabia without permanent or persistent bodies of surface water do not support transmission of leptospirosis or schistosomiasis. Risk is restricted to wetter areas, particularly in the southwest, where bodies of surface water exist. These diseases can debilitate personnel for up to a week or more. In addition, though not specifically assessed in this document, bodies of surface water are likely to be contaminated with human and animal waste. Activities such as wading or swimming may result in exposures to enteric diseases such as diarrhea and

hepatitis via incidental ingestion of water. Prolonged water contact may also lead to the development of a variety of potentially debilitating skin conditions such as bacterial or fungal dermatitis.

Sexually Transmitted and Blood-borne Diseases

The prevalences of HIV and hepatitis B virus carriers are both low, but rates typically are higher among prostitutes and intravenous drug users. Gonorrhea, chlamydia, and other infections may affect a high percentage of personnel who have sexual contact. HIV/AIDS and hepatitis B also occur. Though the immediate impact of HIV/AIDS and hepatitis B on an operation is limited, the long-term health impact on individuals is substantial. Other diseases that often are common in prostitutes include chancroid, herpes, lymphogranuloma venereum, syphilis, and venereal warts.

Respiratory Diseases

The incidence of active tuberculosis is estimated at 40 per 100,000 population (compared to the U.S. rate of approximately 5 per 100,000 population), and tuberculin skin test conversion rates may be elevated over baseline for personnel with prolonged close exposure to the local populations.

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

Animal-associated Diseases

Rare cases of anthrax could occur among personnel exposed to animals, animal products, or undercooked meat. Rare cases of Q fever could occur among personnel exposed to aerosols from infected animals, with clusters of cases possible in some situations. Significant outbreaks (affecting 1 percent to 50 percent) can occur in personnel with heavy exposure to barnyards or other areas where animals are kept. Human rabies risk in Saudi Arabia is roughly equal to that in the United States; personnel bitten by potentially infected reservoir species may develop rabies in the absence of appropriate prophylaxis.

Medical Capabilities

Saudi Arabia's health care system is generally considered one of the best in the Middle East. It is a sophisticated health care system that provides primary, secondary, and tertiary care to all of the country's citizens as well as to *Hajj* pilgrims.

Saudi Arabia relies heavily on expatriate health care workers. Many expatriate physicians are Western trained and provide a high level of care. Nursing care generally is inadequate.

Emergency services are managed by each hospital through the Saudi Red Crescent Society (telephone 997). Emergency medical response is weak due to a lack of trained personnel at all levels of response. An adequate number of ambulances are available, and they are suitably equipped. However, ambulance response time is unpredictable, and few drivers or attendants are properly trained. Consequently, emergency evacuation is basically a "load and go" procedure with little, if any, en route medical care.

Overall Saudi health care facilities are among the best in the region and some approach Western standards of care. However, no facility fully meets U.S. standards. Although many Saudi medical facilities are modern and offer a range of medical services, sanitary conditions and practices are less than optimal. The best medical care is concentrated in Riyadh, followed by Jiddah and Dhahran.

Language and cultural barriers are significant among medical providers and between medical providers and patients. Though English is the common language among medical professionals, comprehension and articulation vary widely. Most physicians are from Islamic nations; nurses are primarily Indian and Filipino. Most medical administrators and supervisors come from Western countries.

Saudi Arabia imports most of its pharmaceuticals from Western Europe and the United States. Pharmaceuticals are generally of Western quality and available in sufficient quantities throughout the country. However, budgetary constraints result in periodic shortages of imported pharmaceuticals in government hospitals and pharmacies.

Blood screening capabilities vary from state-of-the-art to grossly inadequate. Donated blood is usually screened for cytomegalovirus, hepatitis B and C, HIV, and syphilis. Nine Saudi hospitals have received accreditation from the American Association of Blood Banks (AABB).

Saudi Arabia does not import blood; it relies on voluntary blood donations. Hospital blood supplies often are limited because Saudis do not regularly donate blood. Regional blood shortages are worsened by the lack of an efficient national blood distribution program.

Key Medical Facilities

Arabian American Oil Co (ARAMCO) Hospital

Location East of ARAMCO headquarters complex at the

intersection of Dhahran Blvd. and 6th Street,

Dhahran, Saudi Arabia

Telephone 011-966-3-877-8056, 877-8213

Type 483-bed private facility

Capabilities Modern facility with an 8-bed ICU. Medical spe-

cialties – internal medicine, cardiology, dentistry, and family medicine. Surgical specialties – orthopedic and ophthalmic. Has computerized tomography (CT) capabilities and AABB accredited

blood bank.

Comments One of five hospitals in the country accredited by

the JCAHO, the organization that accredits U.S. civilian and CONUS military medical facilities.

King Fahd Military Medical Complex

Location 19 kilometers west of Dhahran and 3.2 kilometers

north of Military City between Dhahran and Riyadh.

Telephone 011-966-3-844-0000

Type 330-bed military facility

Capabilities Medical specialties – cardiology, nuclear medicine,

dentistry, dermatology, internal medicine, psychiatry, pediatrics, and neonatology. Surgical specialties – general, neuro-, vascular, ear/nose/throat (ENT), orthopedic, obstetrics and gynecology (OB/GYN), and plastic. CT scanners, MRI, ultrasound, 24-hour

emergency room.

Comments The complex maintains a preventive medicine sec-

tion that implements environmental health, disease

surveillance, and immunization programs.

King Faisal Specialist Hospital (Jeiddah)

Location 15 kilometers south of King Abdul Aziz Interna-

tional Airfield in the Ar Rawdah district of Jiddah. The main entrance to the facility appears to be on

Al Amir Abu Allah Street.

Telephone 011-966-1-667-7777

Type 200-bed government facility

Capabilities Medical specialties - emergency medicine, urol-

ogy, family medicine, OB/GYN, ENT, cardiology (with a cardiac care unit), general medicine, and medical ICU. Surgical specialties – orthopedic, liver transplantation, cardiovascular, general, and a

surgical ICU. Has CT and MRI capabilities.

Comments Complex houses the King Faisal Cancer Center, the

King Faisal Heart Institute and Children's Cancer Center. This is the designated facility in Jiddah for the King and royal family. Emergency Department is staffed by North American emergency medicine specialists and served by fully equipped ambulances. The ER is U.S.-designed and equipped with 2 trauma rooms and 22 beds. Ninety-five percent of the hospital staff was trained in North America.

King Faisal Specialist Hospital (Riyadh)

Location Al Takhassosi Street, Al Mather section, Riyadh Telephone Administrative, 011-966-3-464-7272; Emergency

Department, 011-966-3-464-3838

Type Government

Capabilities

Medical specialties – cardiology, endocrinology, dermatology, gastroenterology, internal medicine, allergy and immunology, family medicine, nephrology, neurology, infectious diseases, and psychiatry. Surgical specialties – cardiovascular, general, orthopedic, thoracic, plastic, neuro-, oral/maxillofacial, urologic, and OB/GYN. The facility has a hyperbaric chamber, MRI and CT capabilities, a trauma unit, and medical and surgical ICUs.

Comments

The best-equipped civilian medical facility in the kingdom and is mainly for the Saudi royal family. The hospital's blood bank is accredited by the American Association of Blood Banks. Also accredited through the Joint Commission International Organization.

HISTORY

Early History

By 1000 B.C., southern Arabia (present-day Bahrain, Yemen, Oman, and southern Saudi Arabia) was relatively highly developed. It rapidly evolved further, benefiting from steady contact with the outside world through trade routes, by which it exported of frank-incense and myrrh and gained wealth and global connections. Arabic society later benefited from the exchange of ideas that resulted from the presence of Persians and Romans seeking to control the Near East. The multiple religions included Christianity, Judaism, and polytheistic groups that worshipped more than one god.

The life of the Prophet Muhammad in Mecca, born in 570 A.D., was a turning point for Arabia. Muhammad devoted his life to proclaiming the message of Islam, the adoption of which would radically change Arab civilization, unifying tribes with a common goal. Mu-

hammad claimed that there was only one God, and he condemned the worship of idols. Prior to Muhammad's influence, numerous tribes fought for control of the area. By the time of Muhammad's death in 632 A.D., many of the Arab tribes had formed alliances with him but not all had become Muslim. Muhammad expected others, especially pagans, to convert to Islam, but he allowed Christians and Jews to keep their faith if they paid a special tax as penalty. Muhammad's political successor, Abu Bakr, maintained the loyalty of Arab tribes by forcing polytheists to convert to Islam. Because of the zeal of the Muslims, the religion spread to parts of Asia, northern Africa, and other regions. Today, many Arabs refer to the time before the introduction and spread of Islam as "the time of ignorance." Although Muhammad did not appoint a spiritual successor, Islamic leaders called caliphs expanded the Islamic empire into present-day Spain, Pakistan, and the Middle East after his death.

The Al Saud family, a dominant force in Saudi Arabia's history, can be traced back to the region of Najd, near Riyadh, around 1500. The Al Saud were recognized as powerful town leaders. Their rise overlapped that of the Muslim scholar Muhammad bin Abdul Wahhab (1703-87). Abdul Wahhab wrote and preached against practices of the Shi'a Muslims and focused on the principle that there is only one God, who does not share his power with people or things. At that time, the Shi'a Muslims worshipped imams, whom they believed to be appointed by Allah, even after their deaths; some tribes believed natural objects such as rocks and trees in the Imams' tombs also had power. Abdul Wahhab disagreed sharply with these ideas and expanded his message to include strict adherence to the principles of Islamic law. His ideas form the basis of the Wahhabi movement. He believed that political power should be used to implement his theology, and in 1744, he formed a partnership with Muhammad bin Saud. They took an oath to work together to establish a state ruled by Islamic principles. Abdul Wahhab gave the Al Saud a clearly defined religious mission on which to base their political authority.

Muhammad bin Saud led his armies into towns and villages and eradicated popular religious practices that went against Wahhabism. By 1765, Wahhabism and the Al Saud political authority were established over most of the Najd region. Muhammad bin Saud died the same year, but his son, Abdul Aziz, continued the crusade for Wahhabism. During the next decades, the Al Saud-Wahhabi armies attacked Arabic cities, destroying monuments to polytheism. Their raid of Hejaz, a holy region that includes Mecca, angered the Ottoman sultan. In 1812, Egyptian forces fought on the sultan's behalf, recaptured Hejaz, and drove the Al Saud-Wahhabi armies out of the area.

The Al Saud regained control of the Najd region in 1824 under Turki bin Abdullah. He rebuilt Riyadh and established it as the center of Al Saud power. The Al Saud collected taxes, controlled military resources, and kept the Egyptians out of the region. The assassination of Turki bin Abdullah in 1834 led to infighting within the Al Saud family and a decline of their power. In 1891, the rival Al Rashid family took control of Najd and forced the Al Saud family to take refuge in Kuwait.

While exiled in Kuwait, the Al Saud family drafted a plan to create Saudi Arabia. In 1902, young Abdul Aziz and his followers defeated the Al Rashid in Riyadh, gaining a foothold in Najd. From Najd he reestablished his Wahhabi connections and established himself as the Al Saud leader. He made agreements with local tribes and gradually extended his authority for the next 25 years, conquering Najd in 1905, Hail in 1921, and, finally, Hejaz in 1924. Once again the Al Saud controlled Islam's holy land. In 1932, the Kingdom of Saudi Arabia was established with Al Saud as its king.

During the 1930s, Saudi Arabia was affected by the worldwide depression and its economy fell into deep recession. In 1938, oil was discovered and production began under the Arabian American Oil Company (Aramco).

King Abdul Aziz died in 1953 and was succeeded by Crown Prince Saud bin Abdul Aziz. King Saud was known for his extravagant lifestyle and poor spending habits, which grew faster than the government's revenues.

In 1960, Saudi Arabia helped found the Organization of Petroleum Exporting Countries (OPEC). In March 1964, a royal decree approved by the *ulama* (Islamic scholars) reduced King Saud's powers and his personal budget. In November 1964, Saud was removed from power by the royal family and the ulama and was replaced by his brother, King Faisal bin Abdul Aziz. King Faisal aggressively pursued modernization, introducing Western technology and increasing public education spending.

Saudi Arabia faced conflict with Egypt over a civil war in Yemen. Egypt backed the new Yemen republican government while Saudi Arabia backed the royalists. Tensions were eased when Egypt removed its troops from Yemen to prepare for the attack on Israel that led to the Six-Day War in 1967.

Saudi Arabia remained neutral during the Six-Day War between Israeli and Arab forces. However, Saudi Arabia led an oil boycott in 1973 against Western countries, especially the United States, that had supported Israel in the 1973 Yom Kippur War against Egypt and Syria. Oil prices more than tripled during this conflict.

King Faisal was assassinated in 1975 by one of his nephews and was succeeded by Crown Prince Khalid. Relations with the United States remained friendly during King Khalid's reign. In March

1979, Egypt signed a peace treaty with Israel, and as a result, King Khalid broke off all relations with Egypt. The same year, 500 extremists seized the Grand Mosque of Mecca claiming that Saudi Arabia had given up its traditional roots for Western corruption. Because the mosque is considered a holy place, the *ulama* had to authorize the military takeover. Two weeks later, the Saudi Arabian military overtook the extremists and the survivors were beheaded in public. King Khalid made an effort to address the extremists' concerns and increased funding for poor areas.

In 1981, Saudi Arabia supported the formation of the Gulf Cooperation Council (GCC), an alliance of the six Persian Gulf states, aimed at coordinating economic, industrial, and defense policies. During the 1980s, Saudi Arabia began purchasing sophisticated military equipment from the United States. King Khalid died in 1982 and was succeeded by Crown Prince Fahd bin Abdul Aziz. The crash of oil prices in 1986 caused economic challenges for the entire Middle East region, but Saudi Arabia served as a stabilizing force through this time.

King Fahd added "Custodian of the Two Holy Mosques" to his title in 1986. He used this to persuade Arab and Islamic nations to work together. In 1988, King Fahd played an important role in achieving the cease-fire between Iran and Iraq. In 1990, Iraq invaded Kuwait, and Saudi Arabia asked the United States to intervene. Saudi Arabia played a key role in calling for a coalition of foreign troops. The U.S.-led coalition defeated Iraq in Operation DESERT STORM in 1991.

In 1992, King Fahd announced the "Basic System of Government," which described the responsibilities and duties of a ruler. King Fahd divided Saudi Arabia into 13 administrative divisions in 1993 and inaugurated the Consultative Council. However, in

1995 he was incapacitated by a stroke and his half brother, Crown Prince Abdullah bin Abdul Aziz took over the kingdom as the de facto ruler of Saudi Arabia.

Recent History

Fifteen of the 19 hijackers in the 11 September 2001 attacks on the United States were Saudi. In 2003, a suicide bomber killed 35 people in Riyadh and another suicide attack in Riyadh, believed to have been perpetuated by al Qa'ida militants, killed 17 people. In 2004, a series of terrorist attacks occurred in Saudi Arabia: a car bomb at the security headquarters in Riyadh killed 4 people and wounded 148; attacks at a petrochemical site and an oil compound killed 27; two Americans and a BBC cameraman were killed in attacks in Riyadh; and a U.S. engineer was abducted and beheaded. Later that year, the U.S. consulate in Jiddah was attacked and five staff members were killed. In 2006, the government foiled a planned suicide bomb attack on a major oil-processing plant in Abqaiq. Later that year six men allegedly linked to al Qa'ida were killed in a shoot out with police in Riyadh.

National municipal elections were held for the first time from February to April 2005; women were not allowed to vote. Later that year, King Fahd died and was succeeded by Crown Prince Abdullah bin Abdul Aziz. King Abdullah's oil prices have improved the economy. In November 2005, after many years of talks, Saudi Arabia was accepted as a member of the World Trade Organization.

Chronology

Date Event

- 570 Birth of Prophet Muhammad.
- 1891 Al Saud family forced to take refuge in Kuwait.
- 1925 Abdul Aziz established as Arabia's leader.

Date Event

- 1932 Kingdom of Saudi Arabia proclaimed.
- 1938 Oil discovered.
- 1960 Saudi Arabia helps found Organization of Petroleum Exporting Countries (OPEC).
- 1960 King Saud removed from power; replaced by King Faisal.
- 1967 Six-Day War between Israel and Arab forces.
- 1973 Saudi Arabia leads oil boycott against Western countries.
- 1975 King Faisal assassinated.
- 1979 King Khalid breaks off relations with Egypt.
- 1979 500 extremists seize Grand Mosque of Mecca.
- 1981 Saudi Arabia helps found Gulf Cooperation Council (GCC).
- 1986 King Fahd adds "Custodian of the Two Holy Mosques" to his title.
- 1990 Iraq invades Kuwait; Saudi Arabia requests help from United States.
- 1993 Saudi Arabia divided into 13 administrative divisions; Consultative Council inaugurated.
- 2003 Terrorists attack Riyadh.
- 2005 First municipal elections held.
- 2005 Accepted to World Trade Organization (WTO).
- 2005 King Fahd dies.

GOVERNMENT AND POLITICS

Government

Saudi Arabia has been a monarchy since its establishment as a nation state in 1932. The monarchy, the cabinet, and most government positions are held by members of the Saudi royal fam-

ily. Political parties are illegal, and Saudi Arabia has no national legislative body or elections. The king's actions are governed by the Basic Law, a code of civil rights, government operating principles, and regulations that were introduced in 1993. The fundamental dictate of the Basic Law is that the Qur'an and *sunna* (Islamic customs derived from the life of Muhammad) comprise the Saudi constitution.

National Level

Executive Branch

The monarchy is the centerpiece of Saudi government. The king serves as both the head of government and the chief of state. Abdullah bin Abdul Aziz Al Saud has served as king and prime minister since August 2005. His half brother, Sultan bin Abdul Aziz, serves as heir apparent and crown prince. The king is beholden to a number of classes and political factions including the rest of the royal family and the *ulama*. The king is appointed from among the members of the royal family, by the consensus of the royal family and the *ulama*.

Since 1953, the monarchy has been supported by a Council of Ministers, mostly appointed by the king. The Council is composed of the king, in his role as prime minister, the first and second deputy prime ministers, 20 cabinet ministers, 2 ministers of state, and several advisors and leaders of independent organizations.

Legislative Branch

There is no legislative branch in Saudi Arabia. However, the *majlis-al-shura*, or Consultative Council, has served the monarchy in an advisory capacity since its creation in 1993. The *majlis-al-shura* is in the process of making one third of the council elected, rather

than appointed by the king. The *majlis-al-shura* has 120 members. The king appoints the chairman for 4-year terms. The powers of the *majlis-al-shura* are limited to debate, investigative hearings, and the enforcement of government-sponsored legislation. The influence of the *majlis-al-shura* in policy-making has increased.

Judicial Branch

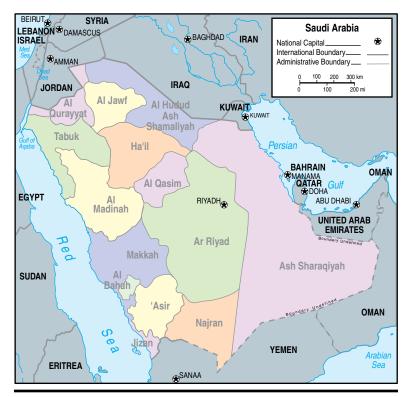
The judiciary is controlled by the Ministry of Justice, an umbrella organization founded in 1970 to oversee the large network of courts. The Supreme Judicial Council, formed the same year, reviews legal decisions. The Saudi legal code authorizes a variety of sentences including death, amputation, and stoning, all of which must be reviewed by the Supreme Judicial Council prior to being carried out.

The judicial branch, unlike its legislative counterpart, is largely independent from the monarchy. However, the royal family is exempt from court appearances and allies of the royal family receive preferential treatment. Judgments are based almost exclusively on the Qur'an and the *sunna*.

There is a formal appeals process for cases heard in the Courts of First Instance (the lowest level), which may be appealed to the Supreme Judicial Council. Cases may proceed to the Council of Ministers, but any judgment rendered there and approved by the king is irrevocable.

Local Level

Since 1993, the kingdom has been divided into 13 provinces, each ruled by a governor and a provincial council, who meet four times annually to consult on provincial development and report



Administrative Divisions

the province's needs to the Council of Ministers. The governors are appointed by the king and most of them are princes or close relatives of the royal family. In 1994, a royal decree divided the 13 provinces into 103 governorates.

The provinces are Al Baha, Al Hudud ash Shamaliyah, Al Jawf, Al Madinah, Al Qasim, Ar Riyad, Ash Sharqiyah (Eastern Province), Asir, Hail, Jizan, Makkah, Najran, and Tabuk.

Politics

Saudi politics are dominated by two themes: the consolidation of power in the royal family and the suppression of dissent by religious leaders. The Saudi royal family controls most government posts, including provincial governments.

The *Mutawwa'in* (religious police) harass members of other religions and Muslims who do not adhere to the strict principles of Wahhabi Sunni worship. Public practice of other religions is strictly prohibited, and the *Mutawwa'in* frequently fail to honor the official government policy to allow private religious practice within the home. Saudi Arabia conducted its first experiment in electoral politics in 2005, opening up half of the seats in the municipal councils for election. Only men were permitted to vote. Religious extremists won the largest number of seats, backed by the *ulama* (religious leaders).

Political Parties

Political parties are illegal, but there are a number of political and religious factions that influence affairs of the state in various ways.

Party Name	Description
Ulama	The ulama are clerical leaders who have
	significant control over decision making.
	Since the beginning of the Saudi dynasty in
	the 1700s, the royal family has paired itself
	with Wahhabist religious leaders to gain le-
	gitimacy. The ulama serve the same function
	today: in exchange for legitimizing Saudi
	political decisions with religious doctrine,
	the ulama influence decisionmaking.

Additionally, the Saudi Arabian National Guard (SANG), a parallel military force completely separate from the regular army, is composed entirely of members of tribes loyal to the royal family.

Tribal Leaders

Several key Bedouin tribes have influenced politics on the peninsula for centuries. They include the Anayzah, Bani Khalid, Harb, Al Murrah, Mutayr, Qahtan, Shammar, and Utaiba. During the reign of ibn Saud (the first king of the modern Saudi state), tribal leaders exercised significant influence in decisionmaking. The tribes are highly influential at the provincial level.

Entrepreneurial Families

The oil boom in the 1960s and 1970s created opportunities for entrepreneurship. Several families became extremely wealthy during that period, including the Kamil, Khashoggi, Ojjeh, and Pharaon. Their wealth has given them influence. Members of the royal family meet with them regularly.

Merchant Families

Before the growth of the oil industry, the royal family relied on wealthy merchant families to support the monarchy. They included the Alireza, Ba Khashab, bin Ladin, Al Qusaibi, Jamjum, Juffali, Kaki, Nasif, Olayan, Al Rajhi, and Sulayman.

With the rising oil income of the 1960s and 1970s, the direct power of the merchant families declined. However, many lucrative development contracts were doled out to several

of the families, which has allowed them to retain a powerful position in Saudi politics.

Shi'a Minority

The Shi'a minority (consisting of roughly 2 million people primarily located in the eastern region of Saudi Arabia) has little political influence. Popular anti-Shi'a sentiment and discrimination has driven many Shi'as underground. The Hanbali school of Islam, based on the teachings of al Wahhab, is the basis of Saudi Arabian law, and frequently discriminates against Shi'as. There is only one Shi'a judge serving the Shi'a population and he is restricted in applying the Shi'a legal tradition in court.

Technocrats

Increasing government development led to the appearance of a class of Western-educated technocrats, many of whom have received appointments to the Council of Ministers. These appointments often caused their political peril, as their reforms periodically put them in ill favor with the royal family.

Foreign Relations

As the world's largest exporter of oil and a leader in Middle Eastern politics, Saudi Arabia interacts with many nations and international organizations. Saudi Arabia carefully balances its relationships in the Middle East with its ties to Western nations like the United States and Japan.

Saudi Arabia's closest partners in the Middle East are fellow Gulf Cooperation Council (GCC) members Bahrain, Oman, Kuwait, Qatar, and the United Arab Emirates. The GCC nations work together to build stronger relations, institutions, and trade based on Islamic principles and Arabic unity.

A growing interest in combating terrorism has strengthened Saudi ties with a number of Western nations. Saudi officials have frozen terrorist funding and are working together with the United States and the international community to further these efforts.

United States

The chief issues underlying United States-Saudi relations are the Arab-Israeli conflict resolution, Middle East security, arms transfers to Saudi Arabia, bilateral trade (especially U.S. oil imports), and Saudi democratic reforms.

Saudi Arabia provides 20 percent of U.S. crude imports and 10 percent of total U.S. consumption. The United States is Saudi Arabia's largest trade partner.

Because of shared regional security interests, the United States is the largest supplier of arms to Saudi Arabia. The U.S. military provides key training in weapons usage and other security-related training to the Saudi military, and the United States has sold Saudi Arabia military aircraft, air defense weaponry, armored vehicles, and other equipment. The U.S. Army Corps of Engineers plays a vital role in Saudi construction endeavors. The most important event in U.S.-Saudi relations was Operation DESERT STORM in 1991, during which the Saudi and U.S. militaries cooperated extensively.

U.S.-Saudi relations were strained after the terrorist attacks of 11 September 2001, in which 15 of the 19 hijackers were Saudi citizens. Saudi government officials expressed their condolences and their willingness to assist the United States in the War on Terror

and have since criticized the U.S. media for attempting to portray the relationship between the two powers as tense.

OPEC Nations

Saudi Arabia is the leading producer in the Organization of Petroleum Exporting Countries (OPEC). Saudi oil officials meet with fellow members Algeria, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, the United Arab Emirates, and Venezuela regularly to fix the price of oil.

Yemen

Saudi relations with Yemen are complicated and frequently strained. The two nations share a 1,458-kilometer (906-mile) border that is often disputed. A treaty in 2000 agreed on a gradual settlement to the border issue between the two countries, but nomadic groups still engage in resistance efforts. Saudi Arabia has placed a concrete-filled pipe as a security barrier to prevent illegal border crossings between the two nations. In June 2006, the two countries signed an additional border accord to ensure cooperation in the completion of that border.

United Arab Emirates

The United Arab Emirates (UAE) recently repealed a 1974 border agreement with Saudi Arabia that had been filed with the United Nations in a treaty but never ratified. It is unclear how the two nations will resolve the question but relations in other areas are very strong: the UAE shares membership in both OPEC and the GCC with Saudi Arabia.

Iran

Relations between Iran and Saudi Arabia have been tense since the Iranian revolution in 1979. As competing regional powers, the two nations have clashed diplomatically over ideological, political, and resources-related differences. Saudi Arabia supported Iraq in the Iran-Iraq War of the 1980s but supported the United States against Iraq in the 1991 Gulf War, leading to a warming of relations between Saudi Arabia and Iran. After a decade of slowly improving ties, the two nations signed a security agreement in 2001. However, Saudi Arabia and other Gulf Cooperation Council (GCC) members see Iran's defense buildup (including its suspected program of developing nuclear weapons) as a direct threat to stability in the Middle East and some related tensions remain between the two countries.

Palestinian Authority

As a member of the Arab League, Saudi Arabia supports Israeli withdrawal to pre-1967 borders in accordance with the Arab interpretation of U.N. Resolution 242. Saudi Arabia has outlined its plan for Middle East peace that involves Arab promises of Israeli security in exchange for such a withdrawal. The recent election of HAMAS as the ruling party in the Palestinian Authority stalled the peace process, but HAMAS members have said they would support the Saudi plan.

European Union

Saudi-EU relations are conducted through a cooperation agreement between the GCC and the EU. All GCC and EU foreign ministers meet annually at a Joint Cooperation Committee to build trade relations and political ties.

International Organizations

Saudi Arabia participates in many international organizations, to include the following:

- Arab Bank for Economic Development in Africa
- African Development Bank

- Arab Fund for Economic and Social Development
- Arab Monetary Fund
- Gulf Cooperation Council
- International Bank for Reconstruction & Development, the World Bank
- Islamic Development Bank
- International Monetary Fund
- League of Arab States (known as the Arab League)
- Non-Aligned Movement
- Organization of Arab Petroleum Exporting Companies,
- Organization of the Islamic Conference
- Organization of Petroleum Exporting Countries
- United Nations
- World Health Organization
- World Trade Organization

ECONOMY

The Saudi economy is based largely on petroleum production. Oil accounts for 75 percent of government revenues, 45 percent of gross domestic product (GDP), and 90 percent of export revenues.

U.S. geologists discovered oil in the kingdom in the 1930s, shortly after King Abdul Aziz Al Saud founded the nation in 1932. Large-scale oil production began in the years after World War II, catalyzing tremendous economic development that was primarily driven by the government in a series of 5-year development plans. Beginning in the 1970s, these plans provided schools, colleges, universities, civilian and military hospitals, industrial estates, pipelines, and port terminals.

In 1933, Standard Oil of California signed a deal with the new Saudi government to explore for oil. After a series of mergers and transfers over the next decade, the corporation became the Arabian American Oil Company (Aramco) in 1944. A consortium of U.S. oil companies held Aramco until 1973, when the Saudi government purchased a 25-percent share. This was the first step toward the complete nationalization of Aramco in 1980, when it was renamed Saudi Aramco.

Saudi Arabia is the world's largest oil producer and its reserves are the largest in the world. Saudi Aramco produces more than 95 percent of Saudi Arabia's oil. Due to its acquisition of refining giant SAMAREC in 1993, Saudi Aramco is the world's largest fully-integrated oil company.

The nationalization of Aramco was a high-profile example of a common theme in the Saudi economy: natural resources should be owned by Saudis, preferably by the government. This attitude is one of the largest obstacles that the kingdom faces in modernizing and globalizing the economy.

The Saudi economy now faces numerous challenges, including high unemployment (around 10 percent according to official estimates, although many unofficial estimates suggest around 30 percent), rapid population growth that will require increased government spending on infrastructure, and growing security threats from extremist elements of Saudi society.

The two most significant challenges are structural. First, the kingdom has resolved to reduce the economy's dependency on fossil fuels through diversification measures. Second, the kingdom wishes to cut down on monopolies and centralized government control in favor of diversification and privatization.



Shopping Mall

The government is attempting to combat unemployment with an ongoing program, to transfer most domestic jobs from foreign laborers to Saudi nationals.

The kingdom controls inflation through a network of price subsidies, which keeps inflation low despite the tendency of the U.S. dollar to drive up the price of imported goods. Inflation remained less than one percent from 1993 to 2006.

High oil prices and exports have produced a revenue windfall, leading to large budget surpluses and a current account surplus beginning in 2004.

After 12 years of economic policy changes and diplomacy, Saudi Arabia joined the World Trade Organization (WTO) in December 2005, becoming the organization's 149th member.

Statistics (2007 Estimates)

Gross Domestic Product (GDP)

Official Exchange Rate US\$302 billion
Purchasing Power Parity US\$572.2 billion

Growth Rate 4.7%

Per Capita US\$20,700

GDP by Sector

Agriculture 3.3%
Industry 61.3%
Services 35.4%
Inflation Rate 3.4%

Debt, Gross External US\$52.89 billion **Unemployment Rate** 9.66% (males only)

unofficial estimates as high as 30%

ImportsUS\$82.7 billionExportsUS\$215 billionLabor ForceUS\$6.48 million

Resources

Saudi Arabia's primary resources are oil and natural gas. In 2005, it had the world's largest proven oil reserves at 260 billion barrels.

Saudi Arabia has more than 80 oil and gas fields but more than 50 percent of the oil reserves are found in only 8 fields. The largest is the Ghawar field, which is the largest oil field in the world at an



Office of Aramco in Dhahran

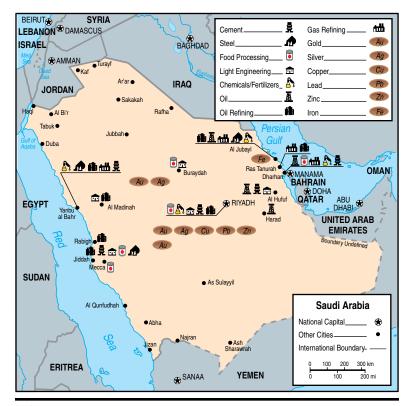
estimated 70 billion barrels. The second largest oil field is Safaniya, which is the world's largest offshore oil field at an estimated 35 billion barrels.

Saudi Arabia has the fourth largest natural gas reserves in the world (after Russia, Iran, and Qatar) at 6.51 trillion cubic meters (230 trillion cubic feet). Only 15 percent of Saudi Arabia's land area has been adequately explored for gas. Most of the natural gas reserves are located deep in the Khuff reservoir underlying the Ghawar oil field.

Industry

Saudi Arabia is the world's largest oil producer with an output of 9.5 million barrels per day. It consumes only 2 million barrels per day, making it the world's largest oil exporter.

The Ghawar oil field accounts for roughly half of Saudi Arabia's total oil production capacity. It has six main producing structures,



Industry

one for each area of the field. From north to south, they are: Farzan, Ain Dar, Shedgum, Uthmaniyah, Hawiyah, and Haradh.

Most crude oil is exported from the kingdom through the Abqaiq processing facility, which handles roughly two-thirds of total oil output. The primary export terminals in the Arabian Gulf are Ras Tanura (which has a capacity of 6 million barrels per day and is the world's largest offshore oil loading facility) and Ras al-Ju'aymah (with a capacity of 3 million barrels per day). The main



Factory

Red Sea export terminal is Yanbu, with a capacity of 5 million barrels per day.

The government has partnered with ConocoPhillips to build a very large export refining facility in Yanbu on the Red Sea. The cost of the facility may exceed US\$6 billion, and planned output will likely reach 400,000 barrels per day.

Oil is transported by two large pipelines. The East-West Crude Oil Pipeline (known as the Petroline) transports 5 million barrels per day. The Abqaiq-Yanbu natural gas pipeline carries 290,000 barrels per day and runs parallel to the Petroline.

As part of its ongoing diversification drive, Saudi Arabia launched a major petrochemical industry in the early 1980s. It is now the second largest industry in Saudi Arabia after fossil fuels production. It is controlled almost entirely by the Saudi Arabian Basic Industries Corporation (SABIC), a government-

owned corporation. SABIC is one of the largest petrochemical producers in the world.

Other industries include metals, commercial ship repair, commercial aircraft repair, construction, and the production of ammonia, industrial gases, sodium hydroxide, cement, fertilizer, and plastics.

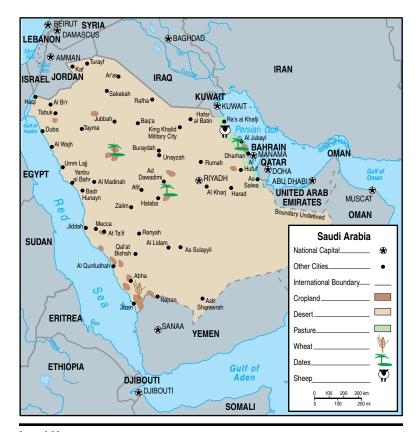
Agriculture

The agricultural sector makes up about 3.3 percent of Saudi Arabia's GDP, limited by the scarcity of water. The primary crop is wheat, which is produced in quantities more than double any other agricultural commodity in the kingdom. Other agricultural products include barley, tomatoes, melons, dates, citrus, mutton, chickens, eggs, milk, and potatoes.

Forests cover 4.5 million hectares (17,400 square miles), insufficient for a forestry industry. The government is trying to pro-



Date Store



Land Use

tect the forests from desertification by planting seedlings and tree barriers.

Electricity

Saudi Arabia produces 145.4 billion kilowatt hours, all used domestically. Current overall generation capacity is 30,526 megawatts.

In the 1970s, the kingdom consolidated a large number of private electric companies into the Saudi Consolidated Electricity Companies (SCECOs) to ensure efficiency in the electricity sector. In 2000, the government nationalized these companies and consolidated them into one public company, the Saudi Electric Company (SEC).

The kingdom faces a rapid increase in electricity demand that is fueled by a growing population and artificially low prices, which are controlled by a tariff structure that puts electricity prices among the lowest in the world. The government is responding to this challenge by building infrastructure and attempting to open the sector up to foreign investment.

Nine out of Saudi Arabia's 30 desalination plants are dual system plants, producing both desalinated water and a surplus of electricity. Twenty percent of the kingdom's power supply is generated from these plants. Because of rising demand for electricity, the kingdom plans to spend US\$53 billion to build more dual-purpose desalination and electricity plants, adding 10.7 million cubic meters per day of generating capacity by 2020.

Eighty percent of Saudi Arabia's population is on the national power grid and the government is encouraging investment to expand that number. The existing grid has roughly 150,000 miles of transmission lines: up to 20,000 more may be necessary.

In 2002, the Supreme Economic Council resolved to promote private sector investment in the development of independent water and power projects (IWPPs). The Electricity Services Regulatory Authority, founded in 2003, oversees the Kingdom's power sector. Despite high barriers to entry, the kingdom's first independent power producer (IPP) went online at Jubail in 2005.

Water

The kingdom is the world's largest producer of desalinated water. The nation's 30 desalination plants in 15 locations have a production capacity of 3.4 million cubic meters (898 million gallons) per day, roughly 20 percent of total desalinated water in the world.

Demand is 6 million cubic meters (1.58 billion gallons) per day, for a per capita consumption of 286 liters (75.5 gallons) per day. Projected water consumption for 2024 is 10 million cubic meters per day. Because of rising demand for both desalinated water and electricity, the kingdom plans to spend US\$53 billion to expand dual-purpose desalination capacity to produce 10.7 million cubic meters (2.8 billion gallons) per day by 2020.

Foreign Investment

Despite a dismal past, the future of foreign direct investment (FDI) in Saudi Arabia is promising. The kingdom's 2005 acceptance into the WTO is contingent on the wider opening of crucial markets. Analysts are optimistic that WTO compliance measures will also include greater transparency and predictability, which will in turn promote investment.

A representative story in the development of Saudi foreign investment projects is that of the 2001 Saudi Gas Initiative (SGI), a planned US\$15- to 20-billion major reopening of upstream hydrocarbons to foreign corporations. A vast foreign ownership scheme was negotiated with multinational corporations. The goal of the project was the integration of upstream natural gas development and downstream petrochemical, power generation, and water desalination functions. However, the government feared opening up enough of the upstream reserves to make the venture profitable for the corporations and also desired to limit the rate of return beneath

the rate the corporations desired. Consequently, all negotiations were terminated in 2003. After the collapse of the initiative, the government repackaged the project in smaller, focused contracts with high rates of return but significantly limited control over midstream and downstream functions.

In May 2000, the kingdom created a new law aimed at promoting foreign investment. It established the Saudi Arabian General Investment Authority (SAGIA) as a "one-stop shop" for foreign investors, permitted full ownership of some Saudi property and projects, and reduced taxes on foreign company profits to 30 percent from the previous, prohibitive 45 percent. Prior to 2000, foreign companies were limited to a 49-percent share in any given Saudi venture. However, the law's effect is limited by statutes that bar full foreign ownership in sectors deemed vital to national security or religious interest, which include upstream oil, pipelines, media and publishing, insurance, telecommunications, defense and security, health services, pilgrimage services, and a number of others. This leaves few profitable sectors actually open for foreign investment.

As a result, virtually all FDI inflows to Saudi Arabia are joint ventures with Saudi corporations. The largest sector is the petrochemical industry. Most joint ventures in that sector are with SABIC.

The kingdom has created an opportunity for vast FDI flows into the King Abdullah Economic City, an enormous government-planned city for industry, high-technology business, and luxury living.

Efforts to restructure the power sector involve deregulation and privatization and it is likely that this will provide many opportunities for foreign investment as well.

Outlook

With oil prices and demand set to remain high or rise, the Saudi economy is likely to continue growing. Budget surpluses are likely to continue, as are current account surpluses. The government plans to increase oil production to 12.5 million barrels per day by 2009, leading to greater revenues.

Government-driven infrastructure growth is also on the rise and will likely continue.

THREAT

Terrorism

Terrorism is the primary threat to the Saudi government. Al Qa'ida and its affiliates, as well as Iranian backed Shi'a groups, remain a clear and present threat to the Kingdom of Saudi Arabia.

The U.S. Department of State maintains a public announcement warning as of 9 April 2007 for U.S. citizens in Saudi Arabia. It advises U.S. citizens to remain vigilant with regards to their personal security. This is based on unconfirmed information and passed attack patterns committed against U.S. citizens by terrorism groups operating within the Kingdom of Saudi Arabia. Attacks on Western facilities include:

- Five gunmen attempting to breach the U.S. Consulate General located in Jiddah on 6 December 2004 using small arms attacks and grenades. The 3-hour gun battle resulted in eight causalities: three gunmen, four local employees, and one guard.
- Lone gunman firing shots from his car at the U.S. consulate in Jiddah on 12 May 2006. No injuries were reported.
- An attack on the Abqaiq oil facilities on 24 February 2006.

Primary groups operating in Saudi Arabia are Abu Mus'ab al Zarqawi Battalion (who was responsible for the foil bombing attack on the U.S. Embassy in Syria), al-Haramayn brigades (this group is responsible for targeting Saudi Intelligence Services), al Qa'ida (based out of Afghanistan), al Qa'ida in the Arabian Peninsula (suspected of being responsible for the beheading of Paul Johnson) and the Islamic Movement for Change (this group is believed to be backed by Iran). All these groups are active and present a threat to U.S. interests in the region.

Crime

Violent and organized crime is low in Saudi Arabia, probably due in large part to the country's strict justice system. In the Saudi justice system, occasionally, one hand is amputated in cases of non-violent theft and a right hand and left foot for those convicted of armed robbery. Reliable statistics on rates of violent and petty crime in Saudi Arabia are unavailable. Press reports indicate rising youth unemployment has contributed to a sharp rise in theft and drug crimes in recent years. Foreign workers in Saudi Arabia, who make up one-third of Saudi Arabia's population, also are blamed for a recent rise in armed robberies and gang activity.

Many everyday actions and practices common in Western countries are illegal in Saudi Arabia. Saudi Arabia's religious police, the *Mutawwa'in*, have broad powers of discretion in enforcing *Shari'a* (Islamic law), including against non-Muslims traveling or residing in Saudi Arabia. Possessing non-Muslim religious writings and materials, for example, is punishable by imprisonment. American citizens have on several occasions been sentenced to floggings of between 30 and 120 lashes for possession of alcohol. Possession of pork and failure to adhere to Saudi dress codes, especially by women, also are punishable offenses.

Travel Security

As of a Travel Warning issued 19 December 2006, the State Department recommended U.S. citizens defer non-essential travel to Saudi Arabia in light of ongoing terrorism-related threats, such as the 12 May shooting at the U.S. Consulate in Jiddah. U.S. citizens were urged to avoid staying in hotels or housing compounds that do not apply stringent security measures including, but not limited to, the presence of an armed guard force, inspection of all vehicles, and a hardened security perimeter to prevent unauthorized vehicles from approaching the facility. U.S. citizens were further advised to exercise caution and maintain good situational awareness when visiting commercial establishments frequented by Westerners or in primarily Western environments. U.S. citizens were advised to keep a low profile, vary times and routes for required travel, ensure travel documents and visas were valid, and to exercise caution while driving, entering, or exiting vehicles. U.S. citizens were strongly urged to register with the U.S. Embassy in Riyadh or the Consulates in Jiddah and Dhahran through the State Department's travel registration website, https://travelregistration. state.gov, to be included in the Mission's warden network.

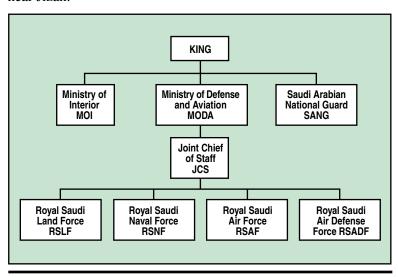
Internal Opposition

Saudi Arabia is an absolute monarchy, and as such, does not recognize political parties, interest groups, or other forms of organized political activity. The Internet, television, and other public media are strictly regulated and screened for content deemed threatening to the interests of the royal family. There is no outspoken movement for peaceful democratic change in Saudi Arabia. In fact, opposition to the Saudi royal family is expressed largely through participation in al Qa'ida or ideologically similar terrorist groups, whose notable activities in the past several years are described in the preceding passage.

ARMED FORCES

Organization

Saudi Arabia's armed forces are fractured by design. With national defense delegated to the Royal Saudi Land Force, regime protection to the Saudi Arabia National Guard, and internal security to the various units of the Ministry of Interior, potential coup plotters cannot control all the necessary levers of power to overthrow the House of Saud. Saudi Arabia has constructed three military cities to aid in deploying personnel to critical regions in crisis situations: these are King Faisal Military City in Tabuk; King Abd al-Aziz Military City in Khamis Mushayt; and King Khaled Military City near Hafr al-Batin. A fourth military city is under construction near Jizan.



Defense Force Organization

Threat Perception

With the collapse of Saddam Hussein's regime in Iraq, Saudi Arabia perceives its principal threats arise from internal oppositionists and, increasingly, Iran. Iran's armed forces are nearly twice as large as is Saudi Arabia's, but Saudi Arabia's air force is much better-equipped and trained than Iran's. Of particular concern to Saudi Arabia is Iran's ability, real or imagined, to stoke unrest and violence in the Shi'ite-dominated and oil-rich Eastern Province. Of secondary concern is Saudi Arabia's porous border with Yemen, where large numbers of troops and border guards are posted to prevent smuggling and infiltration. Saudi Arabia's borders with its GCC partners – Oman, United Arab Emirates, Qatar, Bahrain, and Kuwait – are not of great concern to the Saudi government; of only slightly greater concern is Saudi Arabia's border with Jordan, which is largely stable and controlled.

Military Statistics

Saudi Arabia's defense budget in 2005 was approximately US\$25.4 billion, representing approximately 7 percent of Saudi Arabia's Gross Domestic Product.

Defense Treaties

Saudi Arabia's bilateral military relationship with the United States is enshrined in the United States Military Training Mission to the Kingdom of Saudi Arabia, negotiated between President Franklin Delano Roosevelt and King Abdul Aziz in 1945. MTM is a Security Assistance Organization whose stated mission is to "train, advise, and assist the Saudi Arabian armed forces through security assistance efforts in developing, training, and sustaining capable deterrent and self-defense forces for the Kingdom of Saudi Arabia in order to facilitate regional security." The MTM is further divid-

ed into four service divisions in order to facilitate direct militaryto-military links between the United States' and Saudi Arabia's respective armies, navies, air forces, and marine forces.

Saudi Arabia is a founding member of the GCC, a primarily political-economic organization. The military arm of the GCC is the Peninsula Shield Force, a joint force commanded by a Saudi officer, headquartered at King Khalid Military City, and comprising two brigades, or 10,000 personnel. The GCC members also have standardized their military curricula and training and have made efforts to increase the interoperability of their respective military systems.

Personnel

There are approximately 200,000 active-duty military personnel in Saudi Arabia, with approximately 20,000 reserve personnel and 15,000 paramilitary personnel, making Saudi Arabia's armed forces the 26th largest in the world as of November 2007.

Expansion

The Saudi government is in the process of acquiring large amounts of coastal and naval equipment to modernize its forces. The western coastline is guarded by the premier Naval fleet in Saudi Arabia, but recent events such as the Iranian nuclear issue, the possible U.S. pullout from Iraq and the terrorist attack on Saudi Arabia's giant oil processing plant at Abqaiq, has refocused the Saudi government to strengthen its Eastern coastal defense capabilities.

Projected Equipment

Light Armored Vehicles UH-60L Blackhawks Caesar Sp Artillery Systems Fennec Light Helicopters Tiger Attack Helicopters Typhoon Combat Aircraft NH-90 Helicopters Cougar CSAR Helicopters A330 Tanker Aircraft Dauphin Naval SAR Helicopters

Army - Royal Saudi Land Force

Mission

The Royal Saudi Land Force (RSLF) has the mission to protect the kingdom from external threats.

Organization

Subordinate to the Minister of Defense and Aviation (MODA), the RSLF is organized into six geographic commands with the following major units:

- Four armored brigades
- Five mechanized infantry brigades
- One airborne brigade
- Three artillery groups
- One army aviation command (consisting of two aviation groups).

Facilities

The RSLF is positioned on three major self-contained military cities in strategic areas that enable quick response. The military cities are located so that forces can cover sensitive regions, such as the borders with Iraq and Yemen, and also counter potential threats to major cities, sea ports, oil installations, and Islamic holy sites.

Combat forces are deployed as follows:

■ King Khalid Military City (KKMC), near Hafr al-Batin in north-central Saudi Arabia, is close to the Iraqi and Kuwaiti

borders. The largest of the military cities, KKMC is the headquarters for the Northern Area Command. Major units consist of one armored brigade and one mechanized infantry brigade. KKMC is also the location of the Gulf Cooperation Council (GCC) Peninsula Shield Force.

- King Abdul Aziz Military City (KAAMC) near Tabuk in northwest of Saudi Arabia, is focused on any potential threat from Israel, Syria, or Jordan. KAAMC is the headquarters for the Northwest Area Command; major units include two armored brigades and two mechanized infantry brigades.
- King Faisal Military City (KFMC) in the Khamis Mushayt area in the southwest focuses on any potential threat from Yemen. KFMC is the headquarters for the Southern Command; major units include one armored brigade and two mechanized infantry brigades.
- The Western Area Command (Jiddah) and Eastern Area Command (Dharan) have no major units associated.
- The Central Command, located in Riyadh, is the home of the Royal Guard. This paramilitary unit reports directly to the King. It is responsible for protecting the King and key members of the royal family, along with their residences.

Personnel

The RSLF has an estimated strength of 70,000. Several strategies are in place to avoid implementing conscription in this all volunteer force. The MODA has its own technical high schools and colleges and subsidizes education there in exchange for military service. To induce recruits, pay scales are set high and there are generous allowances and benefits. Facilities at military cities include excellent housing and amenities such as schools, hospitals, and recreational facilities. Enlistment periods are 3 years; cash and other rewards are offered as incentives for reenlistment.

Despite a large population base (sufficient to maintain the military) and what should be an attractive career, Saudi Arabia has difficulty recruiting and maintaining sufficient, qualified manpower. Military service is not attractive to most Saudis (used to living in a welfare state) and those who do enlist often do not have the aptitude or motivation to operate and maintain the RSLF's complex weapons. As a result, the RSLF has to rely on expatriate military and civilian personnel to perform a variety of functions ranging from the service and maintenance of weapons systems to ordering parts and supplies.

Key Military Personnel

Members of the Saudi Royal family hold key civilian and military positions and maintain tight control over every important command activity.

Supreme Commander King Abdullah

Minister of Defense and Aviation Crown Prince Sultan

Assistant Minister of

Defense and Aviation Prince Khalid (Sultan's son)

Deputy Minister of

Defense and AviationPrince AbdulChief of StaffGeneral SalehDeputy Chief of StaffLt Gen Sultan

Training

The King Abdul Aziz Military Academy, located about 50 kilometers from Riyadh, trains officer candidates for the RSLF. The 3-year course awards graduates a bachelor in military science degree and a commission as a second lieutenant. After commis-

Enlisted Rank Insignia

	Mulazim	Mulazim Awwal	Naqib	Raid	Muqaddam	Aqid	Amid	Liwa	Fariq	Fariq Awwal	Mushir
ARMY	13	**	·**	• •		10 ××	·自被	e ok	Pin-On Metal Insignia	8 ***	• 00
AIR FORCE	• 4	• 每每	• 存存存	• •	• 9 4	● ● 資本	• 母母母	• • ×	• • *X	X \$ \$ \$ \$	
UNITED STATES EQUIVALENT	Second Lieutenant	First Lieutenant	Captain	Major	Lieutenant Colonel	Colonel	Brigadier General	Major General	Lieutenant General	General	Field Marshal
NAVY	q	0	Q	d	d	c	O	d	d	q	
UNITED STATES EQUIVALENT	Ensign	Lieutenant Junior Grade	Lieutenant	Lieutenant Commander	Commander	Captain	Captain Commodore	Rear Admiral	Vice Admiral	Admiral	

Officer Rank Insignia

sioning, officers attend a branch school such as artillery, infantry, or armor. At mid career, selected officers attend the Army Staff College in Riyadh - required for promotion to senior ranks - and receive a master of military science degree.

Enlisted soldier and NCO training is provided by a network of schools established across the country. Officers and NCOs in technical fields are often trained in schools in France, the United Kingdom, or the United States. Basic training for recruits is provided by Saudi NCOs.

Equipment

The RSLF has modern equipment from several Western sources: The RSLF also has a variety of Western individual and crew-served infantry weapons including pistols, assault rifles, sub-machineguns, light and heavy machineguns, grenade launchers, and mortars.

RSLF - Major Equipment

Nomenclature Armor	Туре	Quantity
M1A2	Main Battle Tank	315
M60A3	Main Battle Tank	400
AMX-30	Main Battle Tank	290
M2 Bradley	Infantry Fighting Vehicle	400
M113	Armored Personnel Carrier	1,700
AMX-10P	Infantry Fighting Vehicle	570
Artillery		
M109	Self-Propelled Howitzer	153
AU-F1GCT	Self-Propelled Gun-Howitzer	63
M198	Towed Howitzer	66
ASTROS II	Multiple Rocket Launcher	81

Nomenclature	Type	Quantity
Air Defense		
Stinger	MANPADS	500
Redeye	MANPADS	500
Mistral	MANPADS	Unknown
M163 Vulcan	Anti-aircraft gun	20
Shahine (SP)	Missile System	73
	(sub. to the Air Defense Force)	
Shahine (fixed)	Missile System	19
	(sub. to the Air Defense Force)	
Antitank		
TOW 2A	ATGM System	950
HOT	ATGM System	Unknown
Carl Gustav	Recoilless Rifle	288
Aviation		
AH-64 Apache	Attack Helicopter	12
UH-60	Utility Helicopter	22
Bell 406CS	Observation Helicopter	15

Army - Saudi Arabian National Guard

Mission

The Saudi Arabia National Guard (SANG) is a second military force, separate from the MODA. It is officially tasked with protecting the Saud family; maintaining security and stability within the kingdom; defending vital installations such as holy sites, oil refineries and communications centers; and providing a ready reaction force for operations throughout the kingdom. As the kingdom's "second army," it also keeps the RSLF in check and reinforces internal security.

Organization

The SANG is organized into three regional headquarters: Central (Riyadh), Eastern (Damman), and Western (Jiddah) with the following major units:

- Four mechanized infantry brigades
- Five light infantry brigades
- Four independent light infantry battalions
- Military police battalion
- Ceremonial cavalry squadron
- Irregular (Fawj) tribal forces

Facilities

The SANG national headquarters, located within the Central Region (which controls the Eastern and Western regions) and most major units are located in the vicinity of Riyadh. These include three of the four mechanized brigades and one light brigade. Major units in the Eastern Region (tasked to protect the oil infrastructure) include one mechanized and one light infantry brigade. Major units in the Western Region (tasked to protect the Islamic holy cities - Mecca and Medina) include three light infantry brigades.

Key Defense Personnel

As in the RSLF, members of the Saudi Royal family hold key civilian and military positions within the SANG.

Commander King Abdullah

Deputy Commander Prince Badr

Assistant Deputy Commander

for Military Affairs Prince Miteb (Abdullah's son)

Personnel

The SANG has an estimated strength of 75,000 and an additional 25,000 tribal levies (Fawj). It is composed primarily of men drawn from Bedouin tribes who are regarded as being particularly loyal to the crown. Unlike in the RSLF, the SANG has more applicants (officer and enlisted) than it has openings. Retention is high, with only 10 -15 percent of its personnel leaving after their first tour of duty and most personnel serving a 20- to 25-year career.

Members of the Fawj report for duty once a month to receive their pay. They are not well trained or equipped but do serve as a means to bolster subsidies paid to local sheikhs to retain the support of their tribes. Fawj members primarily use obsolete weapons but some purchase their own AK-47 assault rifles.

Training

The SANG trains at a higher level than the RSLF. Combat training is realistic at the battalion level and tailored to the units' geographic region and mission. The SANG uses translated U.S. field manuals and the United States is helping the SANG set up training centers and organize training schedules.

The SANG military academy trains 300 cadets annually (2100 apply) and select officers continue training in the U.S. Officer promotions up to major are increasingly based on merit and not family influence.

Equipment

The SANG does not employ heavy armor; instead, because of their speed, reliability, and ease of maintenance, it uses Piranha II and V-150 Commando Light Armored Vehicles (LAVs). The SANG has 1,117 Piranhas and about 290 V-150 LAVs in use and about

810 more in storage. The SANG may eventually convert units using the LAV-150 to the Piranha. Fire support comes from a variety of towed artillery and various mortars.

SANG- Major Equipment

System	Quantity
Infantry Fighting Vehicle	394
Infantry Fighting Vehicle	165
Armored Personnel Carrier	47
Armored Personnel Carrier	566
Armored C ² Vehicle	184
Armored Personnel Carrier	217
Assault Gun	130
Assault Gun	165
ATGM Carrier	111
ATGM Carrier	100
Mortar Carrier	73
Mortar Carrier	99
Support Vehicle	178
Armored Combat Vehicle	81
Towed Howitzer	6
Towed Howitzer	30
	Infantry Fighting Vehicle Infantry Fighting Vehicle Armored Personnel Carrier Armored Personnel Carrier Armored C ² Vehicle Armored Personnel Carrier Assault Gun Assault Gun ATGM Carrier ATGM Carrier Mortar Carrier Mortar Carrier Support Vehicle Armored Combat Vehicle Towed Howitzer

The SANG also has a variety of Western individual and crewserved light infantry weapons, including pistols, assault rifles, sub-machineguns, light and heavy machineguns, grenade launchers, and mortars.

Navy - Royal Saudi Naval Force

By regional standards, the RSNF is a significant sea-borne threat with relatively modern platforms and command and control capabilities. The force, with its 15,500 personnel, 4 French MEDI-NA-Class frigates, 3 French LA FAYETTE-Class frigates, 4 U.S. PCG-1-Class (former TACOMA) corvettes, 9 U.S. PGG-1-Class guided missile patrol combatants, and numerous patrol and coastal craft, is the second largest navy in the gulf region. Only Iran has a larger naval force.

The RSNF headquarters is located in Riyadh, with two subordinate fleets: the East Fleet, headquartered at Jubail on the Persian Gulf and the West Fleet, located at Jiddah on the Red Sea. Additional bases are located at Aziziah (Coast Guard), and Jizan (under construction since 1996), Al Dammam, Al Qatif, Al Sharmah, Al Wajh, Duba, Haqi, Ras Al Mishab, Ras Tannurah, Tamwah, and Yanbu.

While simultaneous fleet operations in both the Red Sea and the Persian Gulf remain an RSNF doctrinal objective, Saudi Arabia's naval priority remains free navigation through the Strait of Hormuz and maintaining a naval counter-weight to Iran's naval forces. The RSNF is also responding to the regional maritime terrorist threat by emphasizing its mission of protecting Saudi Arabia's maritime oil infrastructure, particularly the Ras Tannurah Oil Terminal.

While the Saudi West Fleet has long been the country's premier fleet, receiving the newest platforms and equipment, the terrorist threats to Saudi oil facilities have underscored the importance of improving the East Fleet's capabilities. As a result, the RSNF is planning to modernize the East Fleet with new ships and other equipment. To date, the RSNF has approached France, the United Kingdom and the United States for proposals on this modernization program but no acquisition decision has been made.

Personnel

Since the mid-1980s, the RSNF has grown from a manned strength of 6,000 to more than 15,500 personnel. This includes two Marine battalions of 3,000 personnel. Like the other Saudi military services, however, it is ill prepared to handle the acquisition of new vessels and technology and is still dependent on foreign contractor support for fleet maintenance and logistics.

Equipment

Surface Fleet

Ship Class	Quantity
LA FAYETTE II Frigate	3
F2000 Frigate	4
PCG 1 Corvette	4
PGG 1 Guided Missile Patrol Combatant	9
NAJA ASD 12 SM 420 Patrol Boat	39
HALTER 78-FT Patrol Boat	17
SANDOWN Mine Hunting Ship	3
MSC 322 Coastal Mine Sweeper	4
LCU 1626 Landing Craft, Utility	4
LCM 6 Landing Craft, Medium	4
BORAIDA Replenishment Oiler	2
AL JOUF Coastal Patrol Craft	4
ABEKING RASMUSSEN CGV 26 Patrol Boat	2
SIMONNEAU SEA GUARD SM742 Patrol Boat	2
DAMEN STAN PATROL 2606 Patrol Boat	6
SLINGSBY SAH 2200 Air-Cushion Landing Craft	3
GRIFFON 8000 TDM Air Cushion Landing Craft	5

Ship Class	Quantity
TEBUK Training Ship	1
Abdul Aziz Miscellaneous Auxiliary (yacht)	1
Al Yamamah Miscellaneous Auxiliary (yacht)	1
Various Patrol Boats	100
Various Coastal Tugs	13

Naval Aviation

Type	Role	Quantity
AS 365F Dauphin 2	ASW/ASUW Helicopter	15
SA 365N Dauphin 2	SAR Helicopter	6
AS 332 F1 Super Puma	ASUW Helicopter	6
AS 332 B1 Super Puma	Troop Transport	6
AS 565 Panther	SAR Helicopter	6
Agusta Bell 412EP	Utility and SAR Helicopters	40

Royal Saudi Air Force

Mission

The air force's mission is to provide strategic defense of the homeland. The Saudi Air Force is considered the front line of defense and protectors of the Kingdom. They are expected to be able to either repel or hold off an aggressor until allied support arrives. Despite RSAF focus on defensive missions, recent acquisitions increase both their offensive and defensive capabilities. The air force has a major role in defending the kingdom's vitally significant oil installations from air attack or amphibious assault, with a particular emphasis on defending potentially vulnerable oil installations in the Arabian Gulf, such as oil platforms, oil pumping stations, and processing/loading facilities.

Organization

The RSAF, with 20,000 personnel and 250 to 300 combat aircraft, represents the most effective air force in the Gulf region. With their superior numbers in aircraft and stand-off capability, they should be able to hold off any aggressor until allied support arrives. The RSAF wants to be able to maintain an inventory of 250 advanced combat aircraft and present a picture of strength and capabilities to any aggressors. The RSAF currently has 18 combat squadrons, 9 training squadrons, and 6 transport squadrons.

Capability

The Saudis take their position as defenders of the Holy Shrines for the world's Muslim community seriously. To that end, they want to present the image of the most well-rounded, modern fighting force in the region, capable of deterring and repelling any aggressors. It has evolved from an essentially defensive armed force to a force with an increasingly effective strike capability, although difficulties remain. The air force has little experience in offensive operations and is perceived to have an over-reliance on foreign technical support and personnel to manage and maintain combat operations. The Saudi Arabian Air Force during Operation DES-ERT STORM did prove effective in deep strike mission capability. Although not currently a major training issue, there is no reason to believe with new weapons and improved command and control they could not do so again. The Saudi's currently use the Tornado IDS aircraft for their reconnaissance missions. There has been talk of upgrading this mission capability but nothing to date.

With an updated doctrine and inventory, the kingdom has been striving to raise its offensive capabilities to the level of its defensive capabilities. The eventual addition of 80 to 100 advanced strike aircraft, to replace the ageing fleet of F-5E/Fs acquired in the early 1970s, will significantly enhance the RSAF's offensive capabilities.

As with the Navy, the RSAF depends heavily on foreign support in materiel, manpower for maintenance, and logistics. The Saudis have made a concentrated effort to place as many Saudis in the support functions as is possible. The ability to train Saudi pilots and crews to operate and maintain the new and upgraded aircraft will determine the feasibility of maintaining approximately 250 combat aircraft.

Training

Aircrew train in-country and at the academies of the United Kingdom and United States. The RSAF has a military academy, the King Fahd Air Force Academy, which is located at Riyadh. Prior to 11 September 2001, pilots were trained in the United States and had a more favorable impression and faith in U.S. support. After that date, restrictions have forced most pilot training to be accomplished in Europe, which has fewer restrictions for visa and training credentials.

Tactics and Doctrine

The RSAF was traditionally defense-oriented, and was therefore limited in its mission capabilities. This, however, has been changing. The RSAF has been receiving greater offensive capabilities under the air force modernization program, with the Tornado and F-15S aircraft, along with more advanced electronics and weapons systems.

The Saudis demonstrate a weakness for strategic air operational planning and execution beyond the squadron level. Communications is stove piped and there is very little joint services communication. The air force has little experience in offensive operations and is perceived to have an over-reliance on foreign technical support and personnel to manage and maintain combat operations. The upgrades to its current fighters and the acquisition of the Euro fighter offer new command and control possibilities, improved radar capabilities, which combined with newer missiles and stand-off weapons, make the Saudi Arabian fighter force a strong deterrent to any potential aggressors.

Deployment

Major air force base facilities are located at:

- Al-Jawf
- Al-Kharj
- Dhahran (King Abdullah Aziz Air Base)
- Hafr al-Batin
- Jiddah (King Khalid Air Base)
- Khamis Mushayt (King Khalid)
- Riyadh (King Faisal Air Academy)
- Tabuk
- Taif (King Fahd Air Base)
- As-Sulayyil

In recent years, four air bases were considered particularly significant in terms of deploying front-line combat aircraft and the defense of particular sectors. Dhahran had the role of defending major oil facilities in the Gulf; Taif protected the ports and the holy cities of the lower Red Sea; Khamis Mushayt covered the sensitive zone bordering Yemen, while Tabuk covered the important ports of the upper Red Sea and the air space close to Syria, Jordan and Israel.

Equipment

The F-5 aircraft are much older and expected to be gone within the next 2 to 4 years. The same can be said for the Tornados, with the Euro fighter purchase and the F-15 upgrades it has a likely life span of 8 to 10 more years. The time to phase the Tornado out will depend on upgrade schedules and number for new aircraft purchased. It is unclear if any aircraft will take over the ground mission of the Tornado.

Saudi Arabia has signed an agreement to purchase the Airbus A-300 as an air refueling tanker and is expected to add another 3 to the inventory. It is unclear if they will be the A-300 or the Boeing 767.

Fixed-Wing Aircraft (quantities are approximate)

Type	Role	Quantity
F-15C	Air Superiority Fighter	56
F-15D	Operational Trainer	19
F-15S	Air Superiority Fighter	73
Typhoon ⁱ	Air Superiority Fighter	Unknown
F-5E Tiger II	Fighter Ground Attack	20
RF-5E Tigereye	Tactical Reconnaissance	5
F-5B	Operational Trainer	14
F-5F	Operational Trainer	15
Tornado IDS	Strike	45
Tornado IDS	Reconnaissance	12
Tornado ADV	Interceptor	27
BAe 167	Primary Trainer	36
E-3A Sentry	AWACS	5
KE-3	Air Tanker/Transport	8

Type	Role	Quantity
A-300	Air Tanker/Transport	3 to 6
KE-3A	Electronic Warfare	2
KC-130H	Air Tanker/Transport	8
C-130H	Tactical Transport	41
L-100-30HS9ii	Hospital	5
VC-130H ii	VIP Transport	6
CN 235M ii	Tactical Transport	4
BAe 125-800 ii	Light Transport	6
Super King Air 200	Light Transport	5
G III ⁱⁱ	Medium Transport	3
$G \ IV^{ii}$	Medium Transport	2
Learjet 35Aii	Light Transport	2
Jetstream 31M	System Trainer	1
Hawk Mk 65iii	Advanced Trainer	32
FR 172	Primary Trainer	13
PC-9 ²	Basic Trainer	27

NOTE: ⁱ72 Typhoon aircraft on order. ⁱⁱAircraft attached or allocated to the Royal Flight. ⁱⁱⁱA further 20 Hawk Mk65 and 20 PC-9 training aircraft were ordered in September 1994. A total of 48 more Tornado IDS and 72 F-15S aircraft have been delivered.

Rotary Aircraft (quantities are approximate)

Type	Role	Quantity
SA 365N Dauphin	SAR	5
AB 204C	Light Support	1
AB 205A-1	Light Support	24
AB 206B	Liaison	28
AB 212 ⁱ	Support	17

Type	Role	Quantity
AB 412	Transport	5
AS 332B/F	Support	12
AS-61A-4i	Medium Support	3
KV-107-I/II	SAR	20
S-70-1A	Medical Evacuation	35
VH-60Li	VIP Transport	1
MOTE, MID ELL-1	A	

NOTE: ⁱVIP Flight support.

Paramilitary Forces

The primary paramilitary forces in Saudi Arabia are subordinate to the Ministry of the Interior (MOI), the main governing body in charge of all paramilitary and law enforcement agencies within the Saudi government. They consist of the Saudi Special Security Force, MOI Police Forces, Frontier Forces, Coast Guard, *Mujahedin* Force, and *Mutawaain*.

The primary mission of these organizations is to ensure internal security and control the border. The MOI is under the control of Prince Navif bin Abdul Aziz al Saud.

The MOI security apparatus has limited capability to successfully launchlarge counterterrorism operations due to poor communications and limited interagency training. They are able to call on the National Guard or, in extreme situations, the regular Army.

Special Security Force

The Special Security Force is the Saudi equivalent of a national Special Weapons and Tactics (SWAT) team, trained to deal with terrorism and hijacking. It has detachments in major Saudi Arabian cities. It has taken a leading role in battling Islamic extremists.

MOI Police Forces

Police security forces are responsible for maintaining order, dealing with routine crime, and internal security matters across the kingdom. They are equipped with small arms and are organized on a provincial and local level, with the relevant provincial governor responsible to the Minister of the Interior for public order. The police security forces are divided into two main directorates: the Public Security Directorate (PSD) and the General Directorate of Investigation (GDI).

The PSD controls the uniformed police. While they are subordinate to the PSD director-general, in practice provincial governors exercise considerable control over PSD personnel in their areas. The PSD's strength is from 20,000 to 40,000. The Special Emergency Forces (SEF) was created within the PSD in 1979 and has taken the lead in the fight against Islamic extremists in the kingdom. The SEF's strength is about 10,000 and with a fleet of helicopters at its disposal, is a highly mobile force, capable of deploying throughout the kingdom.

The General Directorate of Investigation (GDI) controls the special investigation police, or *mubahith* (secret police). Their role is to carry out criminal investigations, domestic security, and counter-intelligence functions.

Frontier Force

The 15,000 man strong Frontier Force is responsible for patrolling the kingdom's land borders in order to counter smuggling and infiltration. Its duties also include customs inspection and it acts as the initial line of defense.

The Frontier Force is equipped with light arms, four-wheel-drive vehicles, and a fleet of helicopters. It utilizes an extensive range of surveillance equipment to include thermal cameras and radar.

Coast Guard

The mission of Saudi coastal defense falls to the Coast Guard. One of its primary roles is to prevent smuggling.

The force operates a range of large patrol craft (based at Jeddah and Al-Dammam) and coastal patrol craft, as well as several hundred inshore patrol craft. There are also hovercraft and one Bell 206B helicopter.

Saudi Arabia will continue to try to be more self sufficient in the defense of its coastal areas.

Religious Police

Unique to Saudi Arabia is the *Mutawwa'in*, or religious police. Not popular among the Saudi population, its primary task is to ensure the public observance of religious requirements such as fasting during Ramadan and the modesty of women. The *Mutawwa'in* has a long history of human rights violations. They hold the authority to detain, collect, and question Saudi citizens, as well as foreign nationals. Most trials held concerning religious issues are closed, and the defendants usually appear before the judge without representation. The *Mutawwa'in* are, however, a valuable local intelligence-gathering organization. It is estimated that the *Mutawwa'in* number about 20,000.

The Mujahidin

The Mujahidin is an independent paramilitary force based in Riyadh. It falls under the Minister of the Interior for administrative reasons, but is under the operational control of the Assistant Minister for Security Affairs. With a strength of about 3000, the Mujahidin largely patrols at night and has taken part in counter-terrorism operations.

APPENDIX A: EQUIPMENT RECOGNITION

INFANTRY WEAPONS

9-mm Pistol Browning High Power FN 35



Caliber
Effective Range
Method of Operation
Feed Device

Weight Loaded Overall Length 9.0 x 19.0 mm (Parabellum)

50 m

Recoil, semiautomatic 13-round box magazine

1.06 kg 204 mm

5.56-mm Assault Rifle M16A1



Cartridge
Effective Range
Maximum Range
Cyclic Rate of Fire
Method of Operation
Feed Device
Weight Unloaded

Weight Unload Length 5.56 x 45 mm 800 m 3,600 m

700 rounds/minute

Gas blowback, direct action, selective fire

20- or 30-round box magazine

3.40 kg 990 mm

5.56-mm Assault Rifle Heckler & Koch Model HK33



Cartridge 5.56 x 45.0 mm **Effective Range** 400 m

Rates of Fire

Cyclic 600 to 750 rounds/minute
Single-Shot 60 to 65 rounds/minute
Method of Operation Delayed gas blowback
Feed Device 30-round box magazine

Weight Unloaded 3.62 kg Weapon Length, Stock Extended 920 mm

5.56-mm Steyr AUG



Type Caliber Cyclic Rate of Fire System of Operation **Feed Device** Weight (Loaded) **Overall Length**

Multipurpose assault rifle 5.56- x 45-mm 650 rounds/minute Gas, selective fire Detachable polymer box magazine 0.49 to 0.66 kg, depending on variant 626 to 915 mm, depending on variant VARIANTS: short assault rifle, carbine, standard assault rifle, heavy-barrel rifle

7.62-mm Automatic Rifle Heckler & Koch Model G3A3



 Cartridge
 7.62 x 51 mm

 Effective Range
 400 m

 Maximum Range
 2,400 m

Cyclic Rate of Fire 500 to 600 rounds/minute Method of Operation Delayed blowback, selective fire

Feed Device 30-round box magazine

Weight Unloaded 4.3 kg Length 1,025 mm

Overall Length
Using the G3: (1) Put selector switch, located on the left side of pistol grip, to the top position: SAFE. (2) Pull operating handle to the rear. (3) Insert loaded 20-round magazine into magazine well at bottom of receiver. (4) Allow bolt to go home chambering a round. G3 IS READY TO FIRE. (5) Put selector switch to middle position: SEMI or bottom position: AUTO.

7.62-mm Sniper Rifle Steyr SSG 69



Caliber Effective Range Operation Feed Device Weight Unloaded Overall Length 7.62 x 51 mm 800 m Rotating bolt action 5-round integral rotary magazine 4 kg 1.14 m

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



Caliber Range

Maximum Effective System of Operation

Feed Device Weight Loaded Overall Length 12.7 x 99.0 mm

2,000 m 1,500 m

Short recoil, semiautomatic fire 10-round box magazine

13.6 kg 1,448.0 mm

9-mm Submachinegun H&K MP5



Cartridge
Effective Range
Maximum Range
Rates of Fire
Cyclic
Single-Shot
Method of Operation

Feed Device

Weight Unloaded

Length

9.0 x 19.0 mm 200 m 1,600 m

650 to 800 rounds/minute 50 to 50 rounds/minute Delayed blowback, selective fire 30-round box magazine

2.0 to 3.4 (varies with model and optional equipment)

kg

325 to 780 mm (varies with model)

9-mm Submachinegun Beretta M12



Caliber
Effective Range
Maximum Range
Cyclic Rate of Fire
Method of Operation
Feed Device
Weight Unloaded
Overall Length

9-mm 100 m 300 m 550 rounds/minute Blowback, selective fire 20- or 40-round box magazine 3.0 kg 417 mm

9-mm MPi69 Submachinegun



Cartridge

Range

Effective Maximum

Cyclic Rate of Fire

Operation

Feed Device Weight Unloaded

Length

9.0 x 19.0 mm

220 m

1.500 m

550 rounds/minute

Gas blowback,

selective (semiautomatic and automatic)

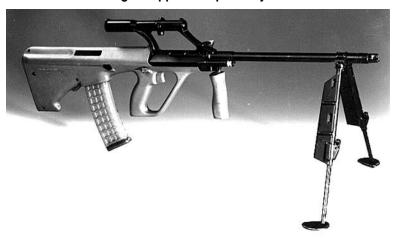
fire

25- or 32-round box magazine

2.93 kg

465 to 670 mm

5.56-mm Light Support Weapon Steyr AUG HBAR



Caliber Maximum Ranges Cyclic Rate of Fire Operation **Feed Device**

Weight Unloaded Overall Length

5.56 x 45 mm NATO

2,800 m

680 rounds/minute Automatic fire

30- or 49-round detachable polymer box magazine

4.9 kg 900 mm

7.62-mm MG3 General-Purpose Machine Gun



Caliber Effective Range

Bipod Tripod

Cyclic Rate of Fire Method of Operation Feed Device

Weight with Bipod
Overall Length

7.62 x 51 mm NATO

800 m 2,200 m

> 1,000 to 1,300 rounds/minute Short recoil, automatic fire

Continuous- or disintegrating-link belt

11.05 kg 1,1225 mm

0.50-in. (12.7-mm) Heavy Machinegun Browning M2 HB



Caliber 12.7 x 99 mm Ranges

Effective 1,500 m Maximum 6,800 m

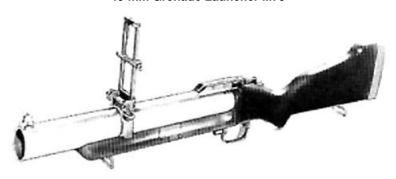
Cyclic Rate of Fire 450 to 600 rounds/minute

Method of Operation Short recoil

Feed Device Disintegrating-link belt

Weight 38 kg
Overall Length 1,651 mm

40-mm Grenade Launcher M79



Ranges

Effective, Point Target150 mEffective, Area Target350 mMaximum400 m

Method of Operation Manual, break-open, single shot

Sights Front, blade; rear, folding leaf, adjustable

Weight Unloaded 2.72 kg Overall Length 737 mm

40-mm HK69 Grenade Launcher



Cartridge Ammunition Types

Effective Range Single-Shot Rate of Fire Operation Sights Front

Rear Weight Unloaded Overall Length 40.0 x 46.0 mm

HE-frag, AP, smoke, flare, stun, CS/CN riot con-

trol agent, signal, and training

400 m

20 to 25 rounds/minute Single-shot, manual Front sight fixed,

Fixed

Dual aperture (short range) and ladder

2.62 kg

463.0 to 683 mm (retractable stock)

81-mm M29, M29A1 Mortar



Crew
Range
Rates of Fire
Sustained
Normal
Burst
Elevation

Traverse Feed

Empty Weight Barrel Length

2 72 to 4,500 m

4 to 8 rounds/minute 15 to 25 rounds/minute 27 to 30 rounds/minute +45 to +85 degrees 5.3 degrees left and right Muzzle loaded

43 kg 1.295 m

81-mm L16 Mortar



Crew; Section Size

Range

Rates of Fire

Sustained

Normal Burst

Elevation Limits

Traverse Limits

At +45 Degrees of Elevation At +85 Degrees of Elevation

Feed

Weight Empty Barrel Length 3;5

5,650 m

10 rounds/minute 15 rounds/minute

20 rounds/minute

+45.0 to +85.0 degrees

5.5 degrees left or right 18.0 degrees left or right

Muzzle loaded

38.3 kg

1,280 mm

ARMOR

Main Battle Tank M1A2



Crew 4

Armament

Main120-mm smoothbore cannonCoaxial7.62-mm machinegun

Turret 12.7-mm machinegun and 7.62-mm machinegun aximum Speed 67 km/h

Maximum Speed

 Range
 425 km

 Gradient/Side Slope
 60/30 percent

 Vertical Obstacle
 1.06 m

 Trench
 2.74 m

Fording 1.22 m (1.98 m with preparation)

Combat Weight 63,100 kg
Length x Width x Height 9.8 x 3.7 x 2.9 m
Fuel Capacity 1,907 liters

Main Battle Tank M60A3



Crew 4

Armament

Main105-mm rifled cannonCoaxial7.62-mm machinegunTurret12.7-mm heavy machinegun

Maximum Speed 48 km/h

Range 480 km Gradient/Side Slope 60/30 pe

 Gradient/Side Slope
 60/30 percent

 Vertical Obstacle
 0.914 m`

 Trench
 2.59 m

Fording 1.22 m (2.4 m with preparation)

Combat Weight 52,600 kg

Length x Width x Height 9.4 x 3.6 x 3.3 m Fuel Capacity 9.4 x 3.6 x 3.3 m

Main Battle Tank AMX 30



Crew Armament

> Main Coaxial Turret

Maximum Speed

Range

Gradient/Side Slope Vertical Obstacle

Trench

Fording Combat Weight

Length x Width x Height

Fuel Capacity

4

105-mm rifled gun

20-mm cannon 7.62-mm machinegun

65 km/h 500 km

60/30 percent

0.93 m 2.9 m

1.3 m (4 m with snorkel)

36,000 kg 9.5 x 3.1 x 2.9 m

1,090 liters

Infantry Fighting Vehicle M2 Bradley



Crew; Passengers

Armament Main

Coaxial Other

Maximum Speed

Road Range Gradient

Vertical Obstacle

Trench Fording

Combat Weight

Length x Width x Height

Fuel Capacity

3;6

25-mm automatic cannon 7.62-mm machinegun TOW ATGM system

66 km/h (7.2 km/h on water)

483 km

60/40 percent 0.914 m 2.54 m

Amphibious with preparation

22,900 kg

6.55 x 3.61 x 2.97 m 662 liters of diesel

Infantry Fighting Vehicle AMX-10P



Crew; Passengers Armament

Main

Main Coaxial

Maximum Speed

Road Range

Gradient

Vertical Obstacle Trench

Fording

Combat Weight

Length x Width x Height

Fuel Capacity

3;8

20-mm cannon

7.62-mm machinegun

65 km/h (7.0 km/h on water)

500 km

60/30 percent

0.7 m

2.1 m

Amphibious

14,500 kg

5.9 x 2.8 x 2.8 m

528 liters of diesel

Armored Personnel Carrier M113A2



Type

Crew; Passengers

Armament

Maximum Speed

Road Range Gradient

Vertical Obstacle

Trench

Fording

Combat Weight

Length x Width x Height

Fuel Capacity Night Vision

NBC

Armored personnel carrier

2; 11

12.7-mm heavy machinegun

61 km/h (6 km/h on water)

480 km

60 percent

0.61 m 1.68 m

Amphibious

11,250 kg

4.86 x 2.69 x 2.52 m

360 liters of diesel

Yes Yes

Armored Personnel Carrier Panhard M3



Crew; Passengers 2; 10

Armament Two 7.62-mm machineguns

Maximum Speed 90 km/h Road Range 600 km

Gradient/Side Slope 60/30 percent
Vertical Obstacle 0.3 m
Trench 0.8 m
Fording Amphibious
Combat Weight 6,100 kg

Length x Width x Height 4.5 x 2.4 x 2.5 m Fuel Capacity 165 liters of gasoline

NOTE: some armed with a 12.7-mm machinegun or twin 20-mm anti-aircraft guns.

Armored Personnel Carrier LAV-150 Commando, LAV-150S



Crew; Passengers

Armament

Main 20-mm Oerlikon gun or others (see below)

3; 2 to 8

Coaxial 7.62-mm machinegun

Road Range800 kmMaximum Road Speed112 km/hMaximum Water Speed5.0 km/hGradient/Side Slope60/30 degreesVertical Step0.61 mFordingAmphibious

Combat Weight 9,800 kg (Commando); 10,900 kg (-150S)

Length x Width x Height 5.70 x 2.36 x 2.54 m (Commando);

6.27 x 2.39 x 2.69 m (-150S)

NOTE: other variants have a 90-mm gun, TOW ATGM launchers, or 81-mm mortar rather than the 20-mm gun.

Armored Vehicle AML H60-7



Crew 3

Armament

Main 60-mm mortar (elevation –15 to +80 degrees)

Auxiliary Twin 7.62-mm machinegun

Maximum Speed90 km/hRange600 km

Gradient/Side Slope 60/30 percent

Vertical Step 0.3 m Trench 3.1 m

Fording 1.1 m (amphibious with kit)

Combat Weight 5,500 kg

Length x Width x Height 3.8 x 2.0 x 1.4 m Fuel Capacity 156 liters of gasoline

NOTE: South Africa variant is designated Eland 60..

Armored Vehicle AML 90



Crew Armament Main Coaxial

Maximum Speed

Range

Gradient/Side Slope

Trench Fording

Combat Weight
Overall Length x Width x Height

Fuel Capacity

3

90-mm rifled cannon 7.62-mm machinegun

85 km/h 450 km 60/30 percent Up to 3.1 m

1.1 m, amphibious with kit

5,500 kg

5.1 x 2.0 x 2.1 m 142 liters of diesel

Light Armored Vehicle Piranha II (LAV II)



Crew; Passengers Armament Main 2 to 4; 11 to 13 (maximum seating 15)

90-mm rifled cannon (LAV-AG) 25-mm cannon with TOW ATGM (LAV-25)

or

Auxiliary 12.7-mm machinegun

 Maximum Speed
 100 km/h

 Range
 780 km

 Gradient/Side Slope
 70/35 percent

Vertical Step 0.5 m

Fording 1.4 m (some variants are amphibious)

Combat Weight 14,000 kg

Length x Width x Height 6.98 x 2.63 x 1.85 Fuel Capacity 300 liters of diesel

NOTE: LAV-AG (90-mm) shown above.

ARTILLERY

Multicaliber Rocket Launcher ASTROS II



Crew; Section 4; 6 Launch Configuration 4 ro

4 rocket pods, mounted horizontally; the number of rockets per pod depends on rocket size

	33-30	33-4 0	33 - 00	33-00
Rocket Diameter (mm)	127	180	300	300
Range (km)	9 to 30	15 to 35	20 to 60	22 to 90
Rate of Fire	32	16	4	4
Rocket Type	HE-frag	DPICM,	DPICM,	DPICM,
		HF-frag	HF-frag	HF-frag

Reload Time 25 minutes Emplacement/Displacement Time 6/1 minutes

Traverse Limits 120 degrees left or right

Elevation Limits 0 to +55 degrees

 Cruise Range
 600 km

 Maximum Cruise Speed
 90 km/h

 Gradient
 60 percent

 Trench
 1.0 m

 Fording
 1.0 m

 Travel Weight
 20,000 kg

Travel Length x Width x Height 7.85 x 2.36 x 3.05 m

155-mm Self Propelled Howitzer M109A1B



Crew 4

Gun Caliber 155.0 mm x 39.0

Ammunition Types HE-frag, smoke, illumination,

Range

Conventional 18,100 m Extended (RAP) 23,500 m

Rate of Fire

Burst 4 rounds/minute for 3 minutes
Normal 2 rounds/minute

Sustained 1 round/minute for 60 minutes

Emplacement/Displacement Time 1 minute Traverse Limits 1 minute Unlimited

Elevation Limits -30 to +75.0 degrees

 Cruise Range
 349 km

 Maximum Cruise Speed
 56 km/h

 Gradient
 60 percent

 Vertical Step
 0.53 m

 Trench
 1.83 m

 Fording
 1.07 m

 Travel Weight
 26,072 kg

Hull Length x Width x Height 6.19 x 3.15 x 2.8 m **NOTE:** may also carry a 12.7- or 7.62-mm machinegun.

155-mm Self-Propelled Gun-Howitzer AU-F1 (GCT)



Crew; Section Size 4; 6

Gun Caliber 155.0 mm x 39.5

Ammunition Types HE-frag, DPICM, illumination, smoke

Range

 Direct Fire
 2,000 m

 Conventional
 23,300 m

 Extended (RAP)
 32,000 m

Rate of Fire
Burst 6 rounds/45 seconds
Normal 4 to 5 rounds/minute

Sustained 2 to 3 rounds/minute
Emplacement; Displacement Time Less than 3 minutes; less than 5 minutes

Traverse Limits Unlimited

Elevation Limits -4 to +66 degrees

Cruise Range 450 km **Maximum Cruise Speed** 60k km/h

Gradient; Side Slope 60 percent; 13 degrees

 Vertical Step
 0.93 m

 Trench
 1.9 m

 Fording
 2.1 m

 Travel Weight
 42,000 kg

Travel Length x Width x Height 10.23 x 3.15 x 3.3 m

155-mm Towed Howitzer M198



Crew; Section Size Gun Caliber Range Rates of Fire Burst

Burst Normal Sustained

Traverse Limits, Left or Right Elevation Limits

Travel Weight

Travel Length x Width x Height Emplacement/Displacement Time

10; 11

155.0 mm x 39.0 9.9 to 18.1 km

4 rounds/minute 2 to 3 rounds/minute 2 rounds/minute 22.5 degrees -4.2 to +71.6 degrees

7,031 kg 12.3 x 2.8 x 2.9 m 2 to 3 minutes

155-mm Towed Howitzer FH-70



Type

Crew; Section 7; 8

Gun Caliber 155.0 mm x 39

Range

Conventional 24,700 m Extended 30,000 m

Rate of Fire

Burst3 rounds in 13 secondsNormal6 rounds/minuteSustained2 rounds/minuteTraverse Limits28 degrees left or right

Elevation Limits -5 to +70 degrees

Ammunition Types HE-frag, DPICM, smoke, illumination

Travel Weight 9,300 kg

Travel Length x Width x Height 9.8 x 2.6 x 2.6 m
Emplacement/Displacement Time Less than 2 minutes

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

105-mm Towed Howitzer M102



Crew; Section Size 8; 9

Gun Caliber 105.0 mm x 30.0

Range 11.5 km

Rates of Fire

Burst 10 rounds/minute for first 3 minutes

Normal 10 rounds/minute
Sustained 3 rounds/minute
Traverse Limit 360 degrees

Elevation Limits -5.0 to +75.0 degrees

Travel Weight 1,363 kg
Travel Length x Width x Height 5.4 x 1.8 x 1.6 m
Emplacement/Displacement Time 1 to 2 minutes

NOTE: gun rotates on octagonal firing platform.

120-mm Self-Propelled Armored Mortar System



Crew; Section Size 4; 5

Tube Caliber x Length 120 x 3,000 mm

Range

Direct Fire 250 to 1,200 m Indirect Fire, Conventional 500 to 13,000 m

Rate of Fire

Burst 10 rounds/minute for 1 minute

Normal 6 rounds/minute
Sustained 4 rounds/minute
Traverse Limits Unlimited

Elevation Limits 0 to +80.0 degrees Emplacement/Displacement Time 15/5 seconds

Cruise Range 780 kg **Maximum Speed** 100 km/h

Gradient/Side Slope 70 percent/15 degrees

Vertical Step 0.5 m

Trench Fording

Travel Weight 11,500 kg

Travel Length x Width x Height 6.37 x 11.50 x 2.50 m

107-mm (4.2-in) Self-Propelled Mortar M106A1



Crew 5

Tube Caliber x Length 106.7 x 1,524.0 mm **Range** 920 to 6,600 m

Rate of Fire

Burst18 rounds/minute for 1 minuteNormal9 rounds/minute for 5 minutes

Sustained 3 rounds/minute

Traverse Limits, Mounted Left 43.6 degrees, right 46.4 degrees

Elevation Limits, Mounted +41.6 to +63.3 degrees

Emplacement/Displacement Time Cruise Range 491.7 km Maximum Speed 69 km/h

Gradient/Side Slope 60 percent/ 13.5 degrees

 Vertical Step
 0.61 m

 Trench
 1.67

 Fording
 Amphibious

 Travel Weight
 11,880 kg

Travel Length x Width x Height 4.93 x 2.87 x 2.50 m

NOTE: The M106A1 is an M30 mortar mounted in an M113 APC. The mortar can be dismounted for fire.

81-mm Self-Propelled Mortar M125A1



Crew 6

Tube Caliber x Length81 x 1,295 mmRange470 to 4,595 m

Rate of Fire

Traverse Limits, Left or Right 70.0 degrees, mounted or dismounted

Elevation Limits Mounted +50 to +85 degrees;

dismounted +40 to +85 degrees

Cruising Range 480 km

Maximum Speed 60 km/h (5.8 km/h on water)

Ground Clearance 0.43 m
Fording Amphibious
Travel Weight 11,365 kg
Travel Length x Width x Height 4.9 x 2.7 x 1.9 m

NOTE: The M125A1 is based on the M113 chassis; see the entry for the M113 for more

information.

120-mm Towed Rifled Mortar MO-120-RT, RT-61



Range 1,100 to 8,350 m

Ammunition Types HE-frag (PR 14, PR PA), IR illumination

Burst Rate of Fire18 rounds/minuteElevation Limits40 to 85 degreesTraverse Limits7.5 degrees left or right

Travel Weight 582 kg
Travel Length x Width 2.70 x 1.55 m
Emplacement/Displacement Time Less than 2 minutes

Prime Mover VAB M120 (variant of VAB APC)

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

4.2-in (107-mm) M30 Mortar



 Crew
 6

 Range
 920 to 6,600 m

 Rates of Fire

Sustained 3 rounds/minute
Normal 9 rounds/minute for 5 minutes

Elevation +40 to +65 degrees Traverse 360 degrees

Ammunition Types HE-frag, illumination, and smoke

Complete Weight 305 kg **Barrel Length** 1.524 m

Burst

Prime Mover 2-ton truck (mortar not normally towed)

18 mounds/minute for 1 minute

ANTI-ARMOR

Heavy Antitank Guided Missile BGM 71D TOW 2/2A



Missile Launch Weight 21.5 kg

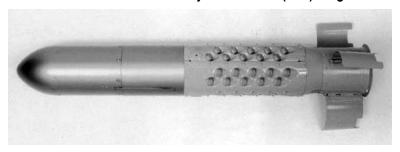
Diameter x Wingspan x Length Warhead 0.152 x 0.45 x 1.52 m 5.72 kg HEAT 65 to 3,750 m

Guidance Optically tracked, wire guided

Armor Penetration 600 mm

NOTE: launch system can be crew-portable, vehicle-mounted, or helicopter-carried.

Medium Anti-armor Missile System FGM-77 (M47) Dragon II



Effective Range Guidance Overall Weight Overall Length 65 to 1,000 m Command to line of sight 22.1 kg (with night tracker) 1.15 m

Vehicle-Mounted Antitank Guided Missile System HOT 2



Effective Range Guidance Type of Rounds Armor Penetration

> HEAT Round Multipurpose Round

Missile Weight
Wingspan
Missile Length y Diam

Missile Length x Diameter 1,300 x 175 NOTE: HOT is shown above mounted on a VAB.

75 to 4,000 m Wire-guided SACLOS HEAT, blast-fragmentation

1,300 mm conventional armor 500 mm conventional armor

24 330 mm 1,300 x 175 mm

112-mm Light Antitank Weapon APILAS



Type Disposable manportable shoulder-fired recoilless

weapon. **Effective Range**

Stationary Target Over 500 m Moving Target Over 300 m

Type of Rounds HEAT
Penetration 400 mm of RHA

Armor 400 mm of HF

Reinforced Concrete 2 m Overall Weight 9.5 kg Overall Length 1,260 mm

84-mm Recoilless Gun Carl Gustaf M3



Type

Effective Ranges

HEAT HEDP

HE

Flechette

Types of Rounds Armor Penetration

Launcher Weight Overall Length Multipurpose manportable shoulder-fired recoilless weapon.

Up to 700 m

Hardened targets 500 m; troop in the open 1,000 m

Up to 1,250 m

100 m

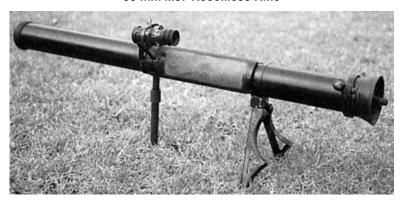
HEAT, HEDP, HE, flechette, illumination, smoke

400 mm of RHA

10 kg

1,065 mm

90 mm M67 Recoilless Rifle



Types of Rounds Ranges Maximum

Effective, Point Target

Rate of Fire

Armor Penetration Weight of Launcher

Overall Length of Launcher

HEAT, HE, and APERS (flechette-filled)

2,100 m (self-destruct)

450 m

1 round/6 seconds (not sustainable) 350 mm with M371A1 HEAT round

16.4 kg 1.35 m

AIR DEFENSE

Man-Portable Surface-to-Air Missile System FIM-92A Stinger



Type 2-stage low-altitude air defense missile system

Ranges
Effective 4,000 m
Maximum 8,000 m

Maximum Engagement Altitude3,500 mWarhead1 kg HE-frag.GuidancePassive IR-ho

GuidancePassive IR-homingFuzeTime-delayed contact

Missile Weight 10.1 kg
System Weight, Shoulder-Fired 15.7 kg
System Weight, Tripod-Mounted 136.4 kg
Missile Length x Diameter 1.47 x 0.069 m
NOTE: Missile and manportable launcher shown above.

Man-Portable Surface-to-Air Missile System FIM-43 Redeye



Type Disposable Shoulder-fired 2-stage low-altitude air

defense missile system

Basic System Components Missile, launcher assembly, battery-coolant unit

Effective Range 500 to 5,500 m

Maximum Engagement Altitude Ground level to 2,700 m
Warhead 2-kg HE-fragmentation
Guidance Passive IR-homing

Fuze Contact
Missile Weight 8.2 kg
Launcher Weight 13.1 kg
Wingspan 140 mm

Missile Length x Diameter 1,283 x 70 mm (launcher diameter is 90 mm)

NOTE: Not very effective against high-performance combat aircraft.

Low- to Medium-Altitude Surface-to-Air Missile System I-HAWK



Missile Designations

Effective Ranges
High-Altitude Target

Low-Altitude Target

Effective Altitude

Warhead

Guidance

Fuze

MIM-23A, MIM-23B

1,500 to 40,000 m (MIM-24B) 2,500 to 20,000 m (MIM-24B)

60 to 17,700 m

54 or 75 kg HE blast-fragmentation

Semi-active radar homing with proportional

navigation

Proximity and contact

Missile Launch Weight 584 kg (MIM-24A) or 627.3 kg (MIM-24B)

Missile Length x Diameter 5.08 x 0.37 m Wingspan 1.19 m

NOTE: I-HAWK can be integrated with Patriot.

Surface-to-Air Missile System Patriot Advanced Capability (PAC) -1, -2,



Type Mobile short-range theater defense missile Range Up to 70 km, depending on target

Warhead 90-kg HE-fragmentation

Command with inertial and semi-active Track-via-

Missile terminal homing

Fuze Proximity
Missile Launch Weight 914 kg

Guidance

Missile Length x Diameter 5.2 x 0.41 m

Surface-to-Air Missile System Patriot Advanced Capability-3 (PAC-3)



Type Mobile short-range theater defense missile

Range 20 km

Intercept Altitude 50 to 15,000 m Warhead HE-fragmentation

Guidance Inertial with updates and active radar homing

Fuze Proximity with fragmentation and kinetic effects

Missile Launch Weight328 kgWingspan0.48 mMissile Length x Diameter5.2 x 0.26 m

NOTE: The PAC-3 was designed to counter surface-to-surface and cruise missiles.

Self-Propelled Low-Altitude Surface-to-Air Missile System Shahine



Missile DesignationsR460Maximum Range15,000 m

Effective Range

 Head-on Target
 500 to 11,800 m

 Crossing Target
 2,000 to 8,000 m

 Effective Altitude
 15 to 6,800 m

Warhead 15-kg high-energy focused splinter

Guidance Command

Fuze Contact and proximity (passive IR or Doppler radar)

Missile Launch Weight100 kgWingspan0.59 mMissile Length x Diameter3.12 x 0.16 m

NOTE: The Shahine missile is an improved Crotale missile. Shahine is mounted on an AMX-30 chassis (as shown above), see the entry for the AMX-30 for mobility characteristics. Shahine is also mounted on naval platforms.

9M313 Igla-1 (SA-16 GIMLET) MANPADS



Type Short-range MANPADS

Maximum Range4,500 m (inbound target) 5,200 m (outbound)Warhead1-kgHE chemical-energy fragmentation with

contact and grazing fuzes

Guidance Single-channel passive infrared homing with

seeker logic system

Combat Weight 16.65 kg Length 1.7 m

NOTE: the seeker logic system shifts the missile's aiming point from the exhaust toward the central fuselage just before impact.

Low-Altitude MANPADS Mistral 1, Mistral 2



Basic System Components 2-stage missile, tripod, electronics box, sighting sys-

tem, battery-coolant unit

Effective Range 300 to up to 6,000+ m depending on missile variant

and target type

Effective Altitude 5 to 3,000+ m

Warhead 3-kg HE-fragmentation Guidance Passive IR-homing

Fuze Contact and active laser proximity

Missile Launch Weight 19 kg (Mistral 2 is lighter)

Weight of Container and Missile 24 kg

Wingspan 0.2 m

Missile Length x Diameter 1.86 x 0.0925 m

40-mm Towed Air Defense Artillery System Bofors L/70



Crew Caliber Ammunition Types

Range

Tactical Antiaircraft Maximum Vertical Maximum Horizontal

Rate of Fire

Traverse Limits; Rate Elevation Limits; Rate

Weight

Length x Width x Height

Platform

5

40 x 365R mm

APC-T, APFSDS, HCHE, HE-T, MP-T, PFHE

Mk2, 3P

2,500 m (optical) or 4,000 (radar)

7,800 m 12,600 m

240 to 300 rounds/minute

360 degrees; 85 degrees/second +5 to +90 degrees; 45 degrees/second

5,150 kg

7.29 x 2.23 x 2.35 m

4-wheel cruciform carriage or ship-mounted

35-mm Twin GDF-001, -002, -003,005



Crew Cartridge

Ammunition Types

Range

Tactical Antiaircraft Maximum Vertical Maximum Horizontal Rate of Fire per Barrel

Traverse Limits; Rate Elevation Limits; Rate

Weight

Travel Length x Width x Height Emplacement/Displacement Time

NOTE: GDF-005 shown

3 (1 for GDF-005) 35.0 x 228 mm

HEI, HEI-T, SAPHEI-T, APDS-T, PFHE

Up to 4,000 m 8,500 m 11,200 m

550 rounds/minute

Unlimited; 120 degrees/second –5 to +92 degrees; 60 degrees/second

GDF-001 to -003 approximately 6,400 kg;

GDF-005 7,700 kg

GDF-003 7.8 x 2.26 x 2.6 m

2 to 4/5 minutes

30-mm Self-Propelled Anti-aircraft Gun System AMX-30SA



Crew 3

Cartridge 30 x 170 mm

Ammunition Types HEI, HEI-T, APHEI, API-T

Range

Tactical Antiaircraft3,000 mMaximum Vertical8,200 mMaximum Horizontal10,200 m

Rate of Fire per Barrel600 to 650 rounds per minuteReaction Time7 to 9 seconds, estimatedTraverse Limits; RateUnlimited; 80 degrees/second

Elevation Limits; Rate -5 to +83 degrees; 45 degrees/second

Maximum Travel Speed65 km/hSystem Weight17,200 kgChassis Length x Width6.59 x 3.10 m

System Height, Antenna Extended 3.8 m

NOTE: The gun turret is mounted on an AMX-30 chassis (as shown above), see the entry for the AMX-30 for mobility characteristics.

20-mm Self-Propelled Anti-aircraft Gun System M163 Vulcan



Crew 4

Cartridge 20 x 102 mm Ammunition Types HEI, HEI-T, AP-T

Operation Motor-driven Gatling-type, automatic fire

Range

Tactical Antiaircraft 1,200 m Maximum Vertical 4,000 m Maximum Horizontal 4,500 m

Rate of Fire Selectable, 1,000 or 3,000 rounds/minute

Reload Time 5 seconds
Emplacement/Displacement Time 1 minute

Traverse Limits; Rate Unlimited; 60 degrees/second

Elevation Limits; Rate —5 to +80 degrees; 45 degrees/second

 Maximum Travel Speed
 67 km/h

 Cruise Range
 483 km

 System Weight
 12,310 kg

System Length x Width x height 4.86 x 2.85 x 2.736 m

Fuel Capacity 360 liters

NOTE: The M163 uses an M113 chassis; see the M113 entry for mobility characteristics.

AIRCRAFT

F-15C, -15S, -15D Eagle



Mission Air-superiority fighter with ground-attack role

Crew 1 (F-15C, -15S); 2 tandem (F-15D)

Maximum Speed More than 800 kn

Ferry Range 2,500 nmi

Maximum Endurance 15 hours with in-flight refueling

Service Ceiling 18,300 m

Armament

Primary 3x air-to-surface weapon stations (five if con-

figured with conformal fuel tanks) allow for the carriage of up to 10,705 kg of bombs, rockets or

additional ECM equipment

Secondary Variety of 4x or 8x air-to-air missiles, 1x 6-barrel

20-mm gun

Maximum Takeoff Weight30,600 kgWeight Empty, Equipped12,973 kg

Overall Length x Wingspan x Height 19.43 x 13.05 x 5.63 m

Eurofighter Typhoon



Mission Multirole fighter

Crew 1 (standard) or 2 tandem (trainer)

Maximum Level Speed Mach 2.0

Combat Radius

Ground Attack, Lo-Lo-Lo 325 nmi Air Defense, 10-min. Loiter 750 nmi Service Ceiling 16,765 m

Armament/External Stores

Primary 27-mm cannon

Secondary

Various air-to-air, air-to-surface, antiship, cruise missiles; conventional, smart, cluster bombs;

rockets

External Stores (weapons and fuel)

 Normal
 6,500 kg

 Overload
 7,500 kg

Maximum Takeoff Weight

 Intercept
 16,000 kg

 Attack
 21,000 kg

 Overload
 23,500 kg

 Weight Empty, Equipped
 11,150 kg

Overall Length x Wingspan x Height 15.96 x 11.28 x 5.28 m

Tornado ADV Interceptor



Mission All-weather air defence interceptor, air superiority

fighter and combat patrol

Crew 2 tandem Maximum Level Speed 800 kn

Ferry Range 2,100 nmi Intercept Radius

Supersonic More than 300 nmi Subsonic More than 1,000 nmi

Endurance, Combat Patrol 2 hours

Operational Ceiling Approximately 21,335 m

Armament

Fixed 1x 27-mm cannon

External 4x Sky Flash semi-active radar-homing mediumrange air-to-air missiles; 2x AIM-9L Sidewinder

IR homing short-range air-to-air missiles

Maximum Takeoff Weight 27,986 kg Basic Weight Empty 14,500 kg

Overall Length x Wingspan x Height 18.68 x 8.60 to 13.91 x 5.95 m

Tornado IDS Strike



Mission

All-weather close air support/battlefield interdiction, interdiction/counter-air strike, naval strike,

and reconnaissance

Crew 2 tandem
Maximum Level Speed Above 800 kn
Ferry Range 2.100 nmi

External

Armament Except 2x 27-mm cannon

May include Sidewinder air-to-air, and ALARM or HARM anti-radiation missiles; Paveway laser-guided bomb; Maverick, Kormoran air-to-surface missiles; BL 755 cluster bombs; MW-1 munitions dispenser; 454-kg bombs; smart or retarded bombs; BLU-1B 340 kg (750 lb) fire bombs; Matra 250 kg (551 lb) ballistic and retarded bombs; Lepus flare bombs; LAU-51A and LR-25 rocket

Lepus flare bombs; LAU-51A and LR-25 rocket launchers; possibly Brimstone, Storm Shadow, Paveway IV

Maximum Takeoff Weight 27,950 kg
Basic Weight Empty 13,890 kg

Overall Length x Wingspan x Height 16.72 x 8.60 to 13.91 x 5.95 m

F-5B Freedom Fighter



Mission Operational trainer

Crew 2 tandem Never-Exceed Speed 709 kn Range 1,405 nmi

Armament 2x 20-mm guns, 2x air-to-air missiles; various

bombs, air-to-air and surface-to-air missiles, rock-

ets, gun packs

Service Ceiling15,850 mMaximum Military Load2,812 kgMaximum Takeoff Weight9,298 kgWeight Empty3,792 kg

Overall Length x Wingspan x Height 14.12 x 7.70 x 3.99 m

F-5E, -5F TIGER II



Mission Fighter, ground attack (F-5E); operational trainer (F-5F)

Crew 1 (F-5E) or 2 tandem (F-5F)

Maximum Speed709 knRange1,341 nmi

Armament

Primary 2x air-to-air missiles on wing tips;

1x or 2x 20-mm cannon in fuselage

Secondary Up to 3,175 kg of mixed ordinance including rock-

ets, missiles, and cluster bombs

Service Ceiling 15,790 m

Maximum Takeoff Weight

F-5E 11,214 kg **F-5F** 11,409 kg

Weight Empty

F-5E 4,410 kg **F-5F** 4,797 kg

Overall Length x Wingspan x Height

F-5E 14.45 x 8.13 x 4.07 m **F-5F** 15.65 x 8.13 x 4.13 m

RF-5E Tigereye



Mission Tactical Reconnaissance

Crew 1

Maximum Speed 709 kn

Mission Radius 595 nmi (High altitude, 3x drop tanks)

Armament

Primary 2x air-to-air missiles on wing tips; 1x or 2x 20-mm

cannon in fuselage

Secondary Up to 3,175 kg of mixed ordinance including rock-

ets, missiles, and cluster bombs

Service Ceiling 15,790 m Maximum Takeoff Weight 11,214 kg Weight Empty 4,410 kg

Overall Length x Wingspan x Height 14.45 x 8.13 x 4.07 m

BAe 167 Strikemaster



MissionArmed trainerCrew2 side-by-sideMaximum Level Speed410 kn at 6,100 mRange at Max. Takeoff Weight1,200 nmi

Armament

Fixed 2x 7.62-mm machineguns

Secondary Various rockets, bombs, napalm tanks, gun packs

Service Ceiling12,200 mMaximum Takeoff Weight5,215 kgOperating Weight Empty2,810 kg

Overall Length x Wingspan x Height 10.27 x 11.23 x 3.34 m

Hawk Mk 65



MissionAdvanced trainerCrew2 tandemMaximum Level Speed545 knFerry Range1,575 nmiService Ceiling14,020 m

Armament 30-mm gun pod and various rockets, bombs,

cluster bombs, air-to-air missiles

Maximum Weapon Load3,000 kgMaximum Takeoff Weight9,100 kgWeight Empty4,012 kg

Overall Length x Wingspan x Height 11.85 x 9.39 x 3.98 m

C-130B, C-130H; VC-130H; KC-130H; C-130H-30, L-100H-30



Mission Tactical transport and multimission (C-130B, C-130H, C-130H-30); VIP transport (VC-130H);

tanker (KC-130H); hospital L-100HS91-30)

4 or 5

Passengers

Crew

C-130H; VC130H

92 troops, 64 paratroopers, or 74 litter patients

with 2 attendants

C-130H-30; L-100H-30 128 troops, 92 paratroopers, or 97 litter patients

with 4 attendants 325 kn

Maximum Cruising Speed Range with Maximum Payload

Range with Maximum Payload 2,046 nmi **Service Ceiling** 10,060 m

Maximum Payload

C-130H; VC130H 19,356 kg **C-130H-30; L-100H-30** 17,645 kg

Maximum Normal Takeoff Weight

C-130B, -130H; VC130H 70,310 kg KC-130H 79,378 kg C-130H-30: L-100H-30 70.310 ka

Operating Weight Empty

C-130B, -130H; VC130H 34,686 kg **KC-130H** 36,279 kg **C-130H-30; L-100H-30** 36.397 kg

Length x Wingspan x Height

C-130B, -130H; VC130H; KC-130H 29.79 x 40.41 x 11.66 m **C-130H-30; L-100H-30** 34.37 x 40.41 x 11.66 m

NOTE: KC-130H tanker can offload up to 20,865 kg/26,790 liters of fuel at a mission radius of 1,000 nmi. The maximum offload capability is 31,750 kg/40,765 liters of fuel.

A300-600



Mission Airliner; multirole tanker-transport Crew 2 on flight deck, 2 observers

Passengers 285 to 361 (airliner)

Maximum Operating Speed 335 kn **Typical Long-Range Cruise Speed** 472 kn

Refueling Speed 220 to 320 kn (tanker-transport)

Range

Airliner, Typical Load and Fuel 4,050 nmi

Using Standard Fuel4,150 nmi (tanker-transport)Using Transferable Fuel5,400 nmi (tanker-transport)

Maximum Operating Altitude 12,200 m

Maximum Payload Approximately 39,900 kg

Maximum Normal Takeoff Weight

Airliner 165,000 kg Tanker-Transport 170,000 kg

Operating Weight Empty

 Airliner
 90,115 kg

 Tanker-Transport
 89,650 kg

Length x Wingspan x Height 54.08 x 44.84 x 16.51 m

CASA CN-235M-100



Type Role Crew

Equipment

Operational Speed Range Service Ceiling Maximum External Stores Load **Maximum Takeoff Weight Operating Weight Empty**

Length x Wingspan x Height

Transport

Maritime surveillance

3; 51 troops or 46 paratroops in transport

configuration

Search radar, FLIR; 3 attachment points under each wing for external loads, including weapons

210 kn 2,000 nmi 7,315 m

3,500 kg 15,800 kg (235-200), 16,000 kg (235M)

8.800 ka

21.40 x 25.81 x 8.18 m

E-3A Sentry Airborne Warning and Control System; RE-3A (B707) Tactical Airborne Surveillance System; RE-3B (B707) Improved Tactical Airborne Surveillance System



Mission E-3A

RE-3A, RE-3B

Crew
Maximum Level Speed
Max. Unrefueled Endurance
Service Ceiling
Maximum Takeoff Weight
Length x Wingspan x Height
NOTE: .E-3A shown above.

Airborne early warning and control system (AWACS) radar and command-control-communication center
Signals and electronic intelligence, electronic support and countermeasures, electro-optical surveillance
4 flight crew and 13 AWACS specialists (E-3A)
460 kn

More than 11 hours Over 8,850 m 150,820 kg 46.61 x 44.42 x 12.73 m

KE-3A (B707-320)



Mission
Maximum Level Speed
Max. Unrefueled Endurance
Service Ceiling
Fuel Transfer Capability
Maximum Takeoff Weight
Operational Weight Empty
Length x Wingspan x Height

Air tanker and multimission transport 460 kn More than 10 hours Over 9,145 m 55,878 kg of fuel at 1,000-nmi radius Approximately 152,000 kg Approximately 65,500 kg 46.61 x 44.42 x 12.73 m

NOTE: Quick-change cabin and external hardpoints allow additional roles such as coastal patrol, electronic countermeasures, maritime patrol, tactical command and control.

Gulfstream III



25.32 x 23.72 x 7.43 m

Mission Medium transport Crew; Passengers 2 to 3; 19 (C-20 5; 13) **Maximum Cruising Speed** 501 kn **Long-Range Cruising Speed** 442 kn Range 4,100 nmi **Maximum Operating Altitude** 13,720 m Typical Payload 726 kg Maximum Takeoff Weight 31,615 kg **Operating Weight Empty** 17,236 kg

Length x Wingspan x Height

Gulfstream IV



Mission Medium transport Crew 2 plus 2 attendants **Passengers** Up to 19 **Maximum Operating Speed** 340 kn Long-Range Cruising Speed 505 kn Range, Max. Fuel, 8 Passengers 4,220 nmi **Maximum Certified Altitude** 13,715 m **Maximum Payload** 2.948 **Maximum Takeoff Weight** 33,838 kg Manufacturer's Weight Empty 16,102 kg 26.92 x 23.72 x 7.44 m Length x Wingspan x Height

Hawker (BAe) 800XP 1 Light Transport



Mission Light transport 2 or 3 Crew **Passengers** 8 to 12 Maximum Operating Mach No. 0.80 **Long-Range Cruising Speed** 402 kn Ferry Range 2,621 nmi **Maximum Certified Altitude** 12.497 m **Maximum Payload** 1,000 kg Maximum Takeoff Weight 12,701 kg **Basic Weight Empty** 7,029 kg

Length x Wingspan x Height 15.60 x 15.66 x 5.51 m

Beech King Air 200



Mission
Crew; Passengers
Maximum Level Speed
Long-Range Cruising Speed
Ferry Range
Service Ceiling
Maximum Takeoff Weight
Basic Weight Empty
Length x Wingspan x Height

Light transport 1 or 2; 7 292 kn at 7,620 m 222 kn at 8,230 m and normal cruise weight 1,859 nmi at 9,450 m with 45 min. reserves Over 10,670 m 5,670 kg 3,716 kg 13.36 x 16.61 x 4.52 m

Pilatus PC-9



Type Basic trainer Crew 2

Maximum Operating Speed 320 kn

Range, No Reserves 887 nmi at 7,620 m, 20-minute reserves

Service Ceiling 11,580 m Maximum Takeoff Weight 3,200 kg Weight Empty 1,685 kg

Length x Wingspan x Height 10.18 x 10.19 x 3.26 m

AH-64A Apache



Type Attack helicopter Crew 2 tandem

Armament 30-mm automatic cannon; antitank missiles and

2.75-in rockets

Maximum Speed 197 kn

Range with Typical Weapons 259 nmi at 141 kn

Maximum Design Takeoff Weight
Basic Weight Empty
9,525.6 kg
Approximately 5,100 kg

Main Rotor

Number of Blades 4 Diameter 14.6 m

Tail rotor

Number of Blades 4
Diameter 2.8 m
Wingspan 5.2 m

Fuselage Length x Width x Height 15.0 x 2.8 x 4.6 m

AS 565MA Panther, AS 565SA Atalef



Mission Search and rescue; anti-surface vessel and anti-

submarine warfare

Crew 3

Armament Torpedoes and antiship missiles (Exocet,

AS15TT) 4,250 kg

Max. Design Takeoff Weight4,250 kgEmpty Weight2,233 kg

Main Rotor

Number of Blades 4 Diameter 11.94 m

Fuselage Length x Width x Height 12.11 x 3.99 x 3.99 m

NOTE: The AS 565 is based on the AS365F and used the AS 365N2 airframe. Shown

firing a AS 15TT antiship missile.

AS 365F, 365F1 Dauphin 2



Mission Search and rescue; anti-surface vessel and anti-

submarine warfare

Crew

Armament Exocet or AS15TT antiship missiles

 Maximum Speed
 306 kn

 Maximum Endurance Speed
 130 kn

 Range
 450 nmi

 Service Ceiling
 4,850 m

 Maximum Payload
 3,600 kg

Norm. Design Takeoff Weight 4,100 kg Empty Weight 2,166 kg

Main Rotor

Number of Blades 4
Diameter 11.94 m
Tail Rotor Number of Blades 13

Fuselage Length x Width x Height 12.11 x 4.20 x 4.02 m

AS 332F Super Puma



Role Search and rescue; antisurface and antisubma-

rine warfare

Crew

Armament Exocet or AS15TT antiship missiles; Mk 46

torpedoes

Maximum Speed 160 kn Range 432 nmi

Maximum Payload4,400 kgMaximum Takeoff Weight8,700 kgBasic Weight Empty4,120 kg

Main Rotor

Number of Blades

Diameter 15.58 m

Tail Rotor

Number of Blades 5 Diameter 3.04 m

Fuselage Length x Width x Height 14.76 x 3.79 x 4.92 m

S-70A-1, S-70A-1L (VH-60L1), UH-60L, Desert Hawk/Blackhawk



Mission Crew: Passengers

Armament

External

Internal

Never-Exceed Speed Range, Maximum Fuel

Service Ceiling

Cargo Handling or Sling Load **Maximum Design Takeoff Weight**

Basic Weight Empty

Main Rotor

Number of Blades

Diameter

Tail Rotor

Number of Blades 4 Diameter Wing Span 6.4 m

Fuselage Length x Width x Height 15.4 x 2.4 x 3.8 m

Transport, VIP transport, medical evacuation 3: up to 15

Possibly anti-armor missiles, air-to-air missiles,

mines, rockets

Two pintle mounts can accommodate 0.50-in machineguns or 7.62-mm 6-barrel miniguns

193 kn

1,200 nmi (using external tanks)

5,700 m 4,082.4 kg

9,979.2 kg (10,659.6 kg with external lift load)

5,118 kg

16.4 m

3.4 m

AS-61A-41 Sea King



Mission Medium support Crew; Passengers 3; up to 25

Armament Provisions for door-mounted crew-served

Weapons Maximum Dash Speed 142 kn

Range, Maximum Fuel 307 nmi at 124 kn

Service Ceiling

Cargo Handling or Sling Load Up to 3,628.8 kg

Maximum Payload 4,210.3 kg
Maximum Design Takeoff Weight 10,001.9 kg
Basic Operational Weight Empty 5,791.6 kg

Main Rotor

Number of Blades 5 Diameter 18.9

Tail Rotor

Number of Blades 5
Diameter 3.1 m
Wing Span 6.2 m

Fuselage Length x Width x Height 16.7 x 4.9 x 4.9 m

AB-212



 Mission
 Transport

 Crew/Passengers
 2/13

 Range
 270 nmi

 Maximum Dash Speed
 135 kn

Weapons Provisions for door-mounted weapons

Main Rotor

Number of Blades 2 Diameter 24.6 m

Tail Rotor

Number of Blades 2
Diameter 2.6 m
Cargo Handling or Sling Load Cap. 2,268 kg
Maximum Design Takeoff Weight 5,080.3 kg

Fuselage Length x Width x Height 12.9 x 2.9 (skid width) x 4.0 m

AB-205A-1, UH-1H Iroquois



Role Multirole transport, search and rescue, utility

Crew; Passengers 1 to 2; 11 to 14 troops Armament Possible guns, rockets

Maximum speed 124 kn

Range 250 nmi with 11 troops

Cargo Handling or Sling Load 1,814.4 kg Maximum Takeoff Weight 4,309.2 kg Basic Weight Empty 2,237 kg

Main Rotor Number of Blades

Number of Blades 2 Diameter 14.72 m

Tail rotor

Number of Blades 2 Diameter 2.59 m

Fuselage Length x Width x Height 12.62 x 2.61 x 4.15 m



Role Light-lift transport

Crew; Passengers 2; 3

Armament 70-mm rockets possible

Cruising Speed 118 kn

Range, Typical Mission 300 nmi at 118 kn Maximum Takeoff Weight 1,451.5 kg

Empty Weight Approximately 1,000 kg

Main Rotor

Number of Blades 2 Diameter 10.2 m

Tail Rotor

Number of Blades 2 Diameter 2.7 m

Fuselage Length x Width x Height 9.6 x 1.96 x 2.9 m (including skids)

AB 412EP



Role Transport Crew; Passengers 2; 14

Armament Provisions for door-mounted crew-served weap-

ons; may be modified to carry rockets

 Maximum Speed
 140 kn

 Range
 402 nmi

 Maximum Payload
 2,095.8 kg

 Maximum Takeoff Weight
 5,397.8 kg

 Empty Weight
 3,090.7 m

Main Rotor

Number of Blades 4
Diameter 1

Diameter 14.0 m

Tail Rotor

Number of Blades 2 Diameter 2.6 m

Fuselage Length x Width x Height 12.7 x 2.8 x 3.5 m

Bell 406CS



Role Observation

Crew; Passengers 2; 3 (6 external troop seats may be added) **Armament** 0.50-in or 20-mm gun pods (1 or 2), 2.75-in rock-

125 kn

ets, ATGMs, air-to-air missiles

Maximum Speed

Cargo Handling or Sling Load 589.7 kg **Maximum Takeoff Weight** 2,268 kg

Main Rotor

Number of Blades 4 Diameter 10.7 m

Tail Rotor

Number of Blades 2 Diameter 2.7 m

Fuselage Length x Width x Height 10.1 x 1.3 x 2.6 m

H-46-KV-107 (CH-46)



Mission Medical support, search and rescue, fire fighting

Crew; Passengers2; 25Maximum Speed145 knRange, Typical Mission365 nmiMaximum Takeoff Weight11,023.0 kgBasic Weight Empty7.048 kg

Main Rotor

Number of Blades 3 Diameter 15.5 m

Tail rotor

Number of Blades 3 Diameter 15.5 m

Fuselage Length x Width x Height 13.9 x 2.2 x 5.1 m

NOTE: The KV-107 is the designation for the CH-46 built in Japan.

SHIPS

LA FAYETTE II Class FFG



LOA x Max. Beam x Max. Draft Displacement, Full Load Complement

Speed Range Aircraft

Missile Launchers Surface-to-Surface

Air Defense

Guns

Other weapons
Radar Systems
Search, Track, Fire Control
Fire Control
Surface-Search
Early Warning
Sonar Systems

Search and Detect Search and Attack ARABEL, CASTOR II J/C, DECCA-1229 RM, DRBV-26D

CAPTAS 20 (active VDS, towed array) TSM 2633 (hull-mounted)

133 x 17.2 x 4.3 m 4,650 metric tons

190 26 kn

7,000 nmi at 15 kn SA-365F Dauphin 2

MM 40 Block 2 Exocet, AS15TT/MM15

SAAM (Aster 15)

2x 20-mm x 70, 1x 76-mm x 62,

2x 12.7-mm x 90 machinegun

Torpedo F-17P

F2000 Class FF



LOA x Max. Beam x Max. Draft

Displacement, Full Load

Complement

Speed Range

Aircraft

Missile launchers

Surface-to-Surface Air Defense

Guns

Other weapons

Radar Systems

Fire Control

Navigation, Surface-Search

Target Acquisition Sonar Systems

Sonar Systems Navigation

Search and Attack

115 x 12.5 x 4.9 m 2.850 metric tons

179 30 kn

8.000 nmi at 15 kn

Flight deck and hangar for SA-365F Dauphin 2

8x OTOMAT Mk 2 ERATO 26x CROTALE NAVAL

1x 100-mm x 55, 2x twin 40-mm x 70

F-17P Torpedoes

CASTOR II J/C, DECCA-1226, TRS-3004, TRS-

3203

CASTOR II J/C, TRS-3203

DECCA-1226 TRS-3004

ECHO SOUNDER

Sorel Series, TSM 2630

PCG 1 (BADR) FFL



LOA x Max. Beam x Max. Draft
Displacement, Full Load
Complement

74.7 × 9.6 × 4.7 m
1,038 metric tons
56

Speed 31 kn

Range 4,000 nmi at 20 kn
Missile Launchers 8x antiship Harpoon

Guns 1x 76.2 x 62-mm; 1x six-barrel 20-mm Phalanx; 2x 20-mm x 80; 1x 80-mm mortar; 2x 40-mm gre-

nade launchers

Torpedoes Mk 46

Radar Systems

Air Search SPS-40B

Surface Search ISC Cardion SPS-55

Fire Control Mk 92

Sonar System, Search and Attack SQS-56 (DE 1164), hull-mounted

AL JOUF Class WPC



LOA x Max. Beam x Max. Draft Displacement, Full Load Complement Speed at Full Power

Range Guns

Radar Systems Surface-Search Navigation

Sonar System

38.9 x 8 x 1.7 m 210 metric tons 20

38 kn

1,700 nmi at 15 kn

2x 20-mm x 85, 2x 12.7-mm x 90

Racal S 1690 ARPA. Racal RM 1290A. ECHO SOUNDER

DAMEN STAN PATROL 2606 Class WPB



LOA x Max. Beam x Max. Draft Displacement, Full Load Speed $26.5 \times 6.2 \times 1.8 \text{ m}$ 55.8 metric tons 28 kn

ABEKING RASMUSSEN CGV 26 (AL JUBATEL) Class WPB



Mission
LOA x Max. Beam x Max. Draft
Displacement, Full Load
Complement
Speed at Full Power
Range
Guns
Surface-Search Radar System

Coastal surveillance, search and rescue 26.2 × 5.8 × 2.1 m 86 metric tons 12 35 kn 1.100 nmi at 11 kn

SIMONNEAU SEA GUARD SM742 WPB



LOA x Max. Beam x Max. Draft Displacement, Standard Complement Speed, Full Power

Missile Launcher Guns

Radar Systems Navigation/Surface-Search

Fire Control

Racal Decca

10

35 kn

Thomson-CSF Agrion.

2x MM-15 surface-to-surface missiles

2x twin 20-mm, 2x 7.62-mm machineguns

22.5 x 5.6 x 1.7 m

52.5 metric tons

SCORPION WPB



LOA x Max. Beam x Max. Draft
Displacement, Full Load
Complement

17.1 x 4.9 x 1.3 m
33 metric tons
7

Speed, Full Power 25 kn

Range 200 nmi at 22 kn

Guns 2x 12.7-mm machinegun

Navigation/Surface-Search DECCA-1226

Radar System

Navigation Sonar System ECHO SOUNDER

BOSTON WHALER 27-FT Class WPB



LOA x Max. Beam x Max. Draft Displacement, Full Load Complement

Speed

8.3 x 2 x 2 m 2 metric tons 3

35 kn

GRIFFON 8000 TDM Class WLCPA



LOA x Beam x Draft Displacement, Full Load Complement Speed Range Guns

Radar System

21.15 x 11 x 0.32 m 24 metric tons 4 plus 16 troops 50 kn 400 nmi at 45 kn 1x 12.7-mm x 90 Raytheon R-80

HALTER 78-FT Class PB



LOA x Max. Beam x Max. Draft Displacement

Complement

Speed Guns

Surface-Search Radar System

 $23.8 \times 6.1 \times 1.8 \text{ m}$ 58 metric tons

8

28 kn

2x 25-mm; 2x 7.62-mm machineguns

SPS-64; I-band.

NAJA ASD 12-M Class PB



LOA x Max. Beam x Max. Draft

Displacement, Full Load

Complement Speed

Guns

13 x 3.8 x 1.9 m

8 metric tons 5

50 kn

1x 20-mm x 70, 2x 7.62-mm machineguns

Navigation/Surface-Search Furuno; I-band

Radar System

MSC 322 (ADDRIYAH) Class MSC



LOA x Beam x Max. Draft Displacement, Full Load Complement Speed, Full Power Range Guns Surface Search Radar System Sonar System 46.6 x 8.2 x 4.1 m 414 metric tons 39 13.5 kn 2.800 nmi at 9 kn 1x 20-mm x 70 SPS-55 SQQ-14

LCU 1626 Class LCU



LOA x Max. Beam x Max. Draft
Displacement, Full Load
Complement
Speed, Full Power
Range
41.1 x 9.1 x 2.1 m
348 metric tons
14
11 kn
1,200 nmi at 8 kn

 Range
 1,200 nml at 8 kl

 Guns
 2x 20-mm x 70

 Embarked Troops
 400

IFF APX-72 Navigation LN-66

Radar Systems

LCM(6) Class LCM



LOA x Max. Beam x Max. Draft Displacement, Full Load

Complement

Speed Range

Guns

Military Lift

17.1 x 4.4 x 1.2 m

56.2 metric tons

5

9 kn

190 nmi at 9 kn

2x 40-mm grenade launchers

30.8 metric tons/33 m²

BORAIDA Class AOR



LOA x Beam x Draft Displacement, Full Load

Complement Speed, Full Power

Range

Aircraft Guns

Equipment Cargo Capacity

Ammunition
Diesel Fuel
Fresh Water
Aviation Fuel
Provisions
Spares

Radar Systems

Navigation, Surface-Search

135 x 18.7 x 7 m 10.950 metric tons

129 20.5 kn

7,000 nmi at 15 kn

Platform and hangar for SA-365F Dauphin 2

2x twin 40-mm x 70

2x 1-meter LCVPs, 1x RIB

100 metric tons 4,350 metric tons 140 metric tons 350 metric tons 100 metric tons 70 metric tons

DECCA-1226

Abdul AbzizWAG



LOA x Max. Beam x Max. Draft Displacement, Full Load Complement

Speed

Aircraft

Missile launchers Radar Systems $147\times18\times4.9~\text{m} \\ 5{,}000~\text{metric tons}$

65 22.5 kn

Helicopter 1x Bell (hangar below decks)

206B

Jet

Ranger

MANPADS

Unknown surface-search

Al Yamamah WAG



Royal yacht 82 x 13 x 3.5 m

35

19.3 kn

Mission
LOA x Max. Beam x Max. Draft
Displacement
Complement

Speed, Full Power

Aircraft Radar Systems

Navigation, Surface-Search Surface-Search

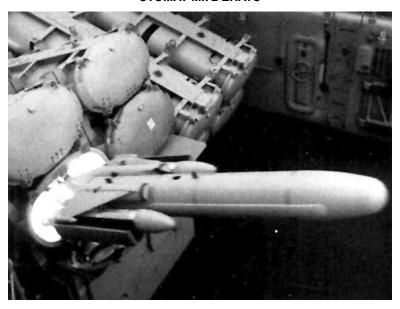
Platform for medium helicopter
DECCA-1226

1,660 metric tons

DECCA-1226 DECCA-1229 RM

Other

OTOMAT Mk 2 ERATO



Type Medium- to long-range antiship/antisubmarine

missile

Range 86 nmi

Warhead 210-kg semi-armor-piercing with 65 kg of

explosive

Guidance Inertial with mid-course correction and active ra-

dar seeker

Fuze Impact and proximity

 Weight
 770 kg

 Diameter
 46 cm

 Length x Wingspan
 4.46 x 1.35 m

NOTE: With the ERATO over-the-horizon targeting system, another ship or a helicopter

provides mid-course guidance commands.

MM 40 Block 2 Exocet



Type
Range
Warhead
Guidance
Fuze
Weight
Diameter
Length x Wingspan

Medium-range antiship/antisubmarine missile 2 to 40.5 nmi 155-kg fragmentation Inertial with active radar seeker Impact and proximity 870 kg 0.35 m 5.8 x 1.13 m

RGM-84C Harpoon



Medium-range antiship missile Туре

Range

Warhead 221.6-kg semi-armor-piercing with 100 kg of HE Guidance

Inertial with active radar seeker

Fuze Contact-delay Weight 681.9 kg Diameter 0.34 m

Length x Wingspan 4.63 x 0.83 m

AS 15TT, MM 15



Type Air-launched (AS 15TT) or ship-launched (MM

15) short-range antiship missile

Range

 MM 15
 1.5 to 8 nmi

 AS 15TT
 1.5 to 9 nmi

 Warhead
 30 kg HE

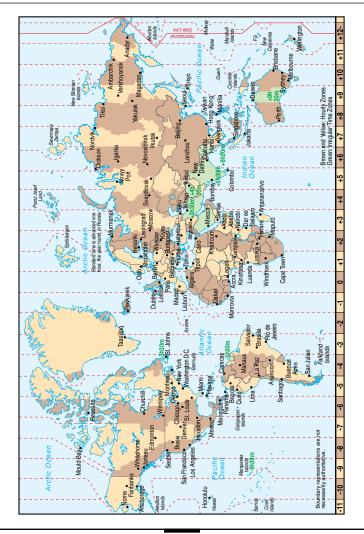
 Guidance
 Radar command

Fuze Delayed impact
Weight 103 kg
Diameter 18.5 cm
Length x Wingspan 2.3 x 0.564 m

NOTE: The missile must be launched while the launcher is facing the target and the missile's seeker has clear line of sight to the target.

APPENDIX B:

INTERNATIONAL TIME ZONES



Coordinated Universal Time (UTC)

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

Country	UTC	Eastern	Central	Mountain	Pacific
Afghanistan	+4.5 H	+9.5 H	+10.5 H	+11.5 H	+12.5 H
Albania	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Algeria	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
American Samoa	-11.0 H	-6.0 H	-5.0 H	-4.0 H	-3.0 H
Andorra	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Angola	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Antarctica	-2.0 H	+3.0 H	+4.0 H	+5.0 H	+6.0 H
Antigua and Barbuda	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Argentina	-3.0 H	+2.0 H	+3.0 H	+4.0 H	+5.0 H
Armenia	+4.0 H	+9.0 H	+10.0 H	+11.0 H	+12.0 H
Aruba	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Ascension	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Australia North	+9.5 H	+14.5 H	+15.5 H	+16.5 H	+17.5 H
Australia South	+10.0 H	+15.0 H	+16.0 H	+17.0 H	+18.0 H
Australia West	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H
Australia East	+10.0 H	+15.0 H	+16.0 H	+17.0 H	+18.0 H
Austria	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Azerbaijan	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Bahamas	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
Bahrain	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Bangladesh	+6.0 H	+11.0 H	+12.0 H	+13.0 H	+14.0 H
Barbados	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Belarus	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Belgium	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Belize	-6.0 H	-1.0 H	+0.0 H	+1.0 H	+2.0 H
Benin	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Bermuda	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Bhutan	+6.0 H	+11.0 H	+12.0 H	+13.0 H	+14.0 H
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	Country	UTC	Eastern	Central	Mountain	Pacific
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 Burloria +2.0 H +7.0 H +8.0 H +9.0 H +10.0 H Burrundi +2.0 H +7.0 H +8.0 H +9.0 H +10.0 H Cambodia +7.0 H +8.0 H +9.0 H +10.0 H Cameroon +1.0 H +6.0 H +7.0 H +8.0 H +9.0 H +10.0 H Canada East -5.0 H +0.0 H +1.0 H +2.0 H +3.0 H -4.0 H +3.0 H -4.0 H +2.0 H +3.0 H -4.0 H +1.0 H +2.0 H +3.0 H -4.0 H +1.0 H +2.0 H +1.0 H +1.0 H +1.0 H +1.0 H +1.0 H	Botswana	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 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 West -8.0 H -3.0 H -2.0 H -1.0 H +0.0 H +1.0 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 Chile -4.0 H +1.0 H +2.0 H +3.0 H +9.0 H China +8.0 H +13.0 H +14.0 H +15.0 H +4.0 H China +8.0 H +13.0 H +14.0 H +15.0 H +16.0 H China +8.0 H +13.0 H +14.0 H +15.0 H +40.0 H China +8.0 H +13.0 H +14.0 H +15.0 H +40.0 H China +8.0 H +13.0 H +14.0 H +15.0 H +40.0 H China +8.0 H +13.0 H +14.0 H +15.0 H +40.0 H China +8.0 H +13.0 H +14.0 H +15.0 H +40.0 H Chorbia -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 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 +3.0 H Cyprus +2.0 H +7.0 H +8.0 H +9.0 H +10.0 H Coeratia +1.0 H +6.0 H +7.0 H +8.0 H +9.0 H Coeratia +1.0 H +6.0 H +7.0 H +8.0 H +9.0 H Coeratia +1.0 H +6.0 H +7.0 H +8.0 H +9.0 H Coeratia +1.0 H +6.0 H +7.0 H +8.0 H +9.0 H Coeratia +1.0 H +6.0 H +7.0 H +8.0 H +9.0 H Coeratia +1.0 H +6.0 H +7.0 H +8.0 H +9.0 H Coeratia +1.0 H +6.0 H +7.0 H +8.0 H +9.0 H Coeratia +1.0 H +6.0 H +7.0 H +8.0 H +9.0 H Coeratia +1.0 H +6.0 H +7.0 H +8.0 H +9.0 H Coeratia +1.0 H +6.0 H +7.0 H +8.0 H +9.0 H Coeratia +1.0 H +6.0 H +7.0 H +8.0 H +9.0 H Coeratia +1.0 H +6.0 H +7.0 H +8.0 H +9.0 H Coeratia +1.0 H +6.0 H +7.0 H +8.0 H +9.0 H Coeratia +1.0 H +6.0 H +7.0 H +8.0 H +9.0 H Coeratia +1.0 H +6.0 H +7.0 H +8.0 H +9.0 H Coeratia +1.0 H +6.0 H +7.0 H +8.0 H +9.0 H Coeratia +1.0 H +6.0 H +7.0 H +	Brazil East	-3.0 H	+2.0 H	+3.0 H	+4.0 H	+5.0 H
Brunei	Brazil West	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Bulgaria	British Virgin Islands	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 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 +3.0 H Canada Mountain -7.0 H -2.0 H -1.0 H +0.0 H +1.0 H +2.0 H +1.0 H +2.0 H +1.0 H +0.0 H +1.0 H +2.0 H +3.0 H +2.0 H <td< td=""><td>Brunei</td><td>+8.0 H</td><td>+13.0 H</td><td>+14.0 H</td><td>+15.0 H</td><td>+16.0 H</td></td<>	Brunei	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H
Burundi	Bulgaria	+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 Chile -4.0 H +13.0 H +1.0 H +1.0 H +1.0 H +1.0 H	Burkina Faso	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 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 Chile -4.0 H +13.0 H +14.0 H +15.0 H +4.0 H Chile -4.0 H +1.0 H +2.0 H +3.0 H +2.0 H Chile	Burundi	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 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 Chile -4.0 H +13.0 H +14.0 H +15.0 H +4.0 H Chile -4.0 H +13.0 H +14.0 H +15.0 H +4.0 H Chile -4.0 H +10.0 H +15.0 H +3.0 H +2.0 H Chi	Cambodia	+7.0 H	+12.0 H	+13.0 H	+14.0 H	+15.0 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 +8.0 H +7.0 H Cayman Islands -5.0 H +0.0 H +1.0 H +2.0 H +3.0 H +9.0 H Central African Rep. +1.0 H +6.0 H +7.0 H +8.0 H +9.0 H +9.0 H Chad Republic +1.0 H +6.0 H +7.0 H +8.0 H +9.0 H +9.0 H Chile -4.0 H +1.0 H +2.0 H +3.0 H +9.0 H +16.0 H Chile -4.0 H +13.0 H +14.0 H +15.0 H +16.0 H +16.0 H Chile -4.0 H +13.0 H +14.0 H +15.0 H +16.0 H	Cameroon	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 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 +9.0 H Chile -4.0 H +1.0 H +2.0 H +3.0 H +9.0 H Chile -4.0 H +1.0 H +2.0 H +3.0 H +4.0 H Chile -4.0 H +13.0 H +14.0 H +15.0 H +16.0 H Chile -4.0 H +13.0 H +14.0 H +15.0 H +16.0 H Chile -5.0 H +0.0 H +1.0 H +2.0 H +3.0 H Colombia	Canada East	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 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 China +8.0 H +13.0 H +14.0 H +15.0 H +16.0 H China +8.0 H +13.0 H +14.0 H +15.0 H +16.0 H China +8.0 H +13.0 H +14.0 H +15.0 H +16.0 H China +8.0 H +13.0 H +16.0 H +16.0 H +16.0 H +3.0 H +2.0 H Colombia -5.0 H +0.0 H +1.0 H +2.0 H +3.0 H </td <td>Canada Central</td> <td>-6.0 H</td> <td>-1.0 H</td> <td>+0.0 H</td> <td>+1.0 H</td> <td>+2.0 H</td>	Canada Central	-6.0 H	-1.0 H	+0.0 H	+1.0 H	+2.0 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 China +8.0 H +13.0 H +14.0 H +15.0 H +16.0 H China +8.0 H +13.0 H +14.0 H +15.0 H +16.0 H China +8.0 H +13.0 H +16.0 H -10.0 H -2.0 H -2.0 H China -5.0 H +0.0 H +1.0 H +2.0 H +3.0 H -2.0 H Colmbia -5.0 H +0.0 H +1.0 H +2.0 H +3.0 H +9.0 H Costa Rica -6.0 H -1.0 H +0.0 H +1.0 H	Canada Mountain	-7.0 H	-2.0 H	-1.0 H	+0.0 H	+1.0 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 Chile -4.0 H +13.0 H +14.0 H +15.0 H +4.0 H Chile -4.0 H +13.0 H +14.0 H +15.0 H +4.0 H Chile -4.0 H +13.0 H +14.0 H +15.0 H +16.0 H Chile -4.0 H +10.0 H -10.0 H -5.0 H -4.0 H -3.0 H -2.0 H Colmbia -5.0 H +0.0 H +1.0 H +2.0 H +3.0 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	Canada West	-8.0 H	-3.0 H	-2.0 H	-1.0 H	+0.0 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 -2.0 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 <t< td=""><td>Cape Verde</td><td>-1.0 H</td><td>+4.0 H</td><td>+5.0 H</td><td>+6.0 H</td><td>+7.0 H</td></t<>	Cape Verde	-1.0 H	+4.0 H	+5.0 H	+6.0 H	+7.0 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 Dominica -4	Cayman Islands	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 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 Cyprus +2.0 H +7.0 H +8.0 H +9.0 H +10.0 H Cyprus +2.0 H +7.0 H +8.0 H +9.0 H +10.0 H Cyprus +2.0 H +6.0 H +7.0 H +8.0 H +9.0 H Cyprus +2.0 H +6.0 H +7.0 H +8.0 H +9.0 H Denmark +1.0 H	Central African Rep.	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 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 Dijibouti +3.0 H +8.0 H +9.0 H +10.0 H +10.0 H Dominica -4	Chad Republic	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 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 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 <	Chile	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 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 +3.0 H Cyprus +2.0 H +7.0 H +8.0 H +9.0 H +10.0 H +10.0 H +10.0 H +10.0 H +10.0 H +9.0 H +10.0 H +9.0 H +10.0 H +9.0 H +10.0 H +4.0 H +4.0 H +4.0 H +3.0 H +4.0 H +3.0 H +4.0 H +	China	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 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 +3.0 H Cyprus +2.0 H +7.0 H +8.0 H +9.0 H +10.0 H +10.0 H -4.0 H +9.0 H +10.0 H +9.0 H +10.0 H +9.0 H -9.0 H	Christmas Island	-10.0 H	-5.0 H	-4.0 H	-3.0 H	-2.0 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 +3.0 H Euador -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 -	Colombia	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
Costa Rica	Congo	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 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	Cook Island	-10.0 H	-5.0 H	-4.0 H	-3.0 H	-2.0 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	Costa Rica	-6.0 H	-1.0 H	+0.0 H	+1.0 H	+2.0 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 +11.0 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	Croatia	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 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	Cuba	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 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	Cyprus	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 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	Czech Republic	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 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	Denmark	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 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	Djibouti	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 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	Dominica	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 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	•	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
El Salvador -6.0 H -1.0 H +0.0 H +1.0 H +2.0 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
Equatorial Guinea +1.0 H +6.0 H +7.0 H +8.0 H +9.0 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	UTC	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
Gibraltar	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Greece	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Greenland	-3.0 H	+2.0 H	+3.0 H	+4.0 H	+5.0 H
Grenada	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Guadeloupe	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Guam	+10.0 H	+15.0 H	+16.0 H	+17.0 H	+18.0 H
Guatemala	-6.0 H	-1.0 H	+0.0 H	+1.0 H	+2.0 H
Guinea-Bissau	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Guinea	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Guyana	-3.0 H	+2.0 H	+3.0 H	+4.0 H	+5.0 H
Haiti	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
Honduras	-6.0 H	-1.0 H	+0.0 H	+1.0 H	+2.0 H
Hong Kong	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H
Hungary	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Iceland	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
India	+5.5 H	+10.5 H	+11.5 H	+12.5 H	+13.5 H
Indonesia East	+9.0 H	+14.0 H	+15.0 H	+16.0 H	+17.0 H
Indonesia Central	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H
Indonesia West	+7.0 H	+12.0 H	+13.0 H	+14.0 H	+15.0 H
Iran	+3.5 H	+8.5 H	+9.5 H	+10.5 H	+11.5 H
Iraq	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Ireland	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H

Country	UTC	Eastern	Central	Mountain	Pacific
Israel	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Italy	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Jamaica	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
Japan	+9.0 H	+14.0 H	+15.0 H	+16.0 H	+17.0 H
Kazakhstan	+6.0 H	+11.0 H	+12.0 H	+13.0 H	+14.0 H
Kenya	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Kiribati	+12.0 H	+17.0 H	+18.0 H	+19.0 H	+20.0 H
Korea, North	+9.0 H	+14.0 H	+15.0 H	+16.0 H	+17.0 H
Korea, South	+9.0 H	+14.0 H	+15.0 H	+16.0 H	+17.0 H
Kuwait	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Kyrgyzstan	+5.0 H	+10.0 H	+11.0 H	+12.0 H	+13.0 H
Laos	+7.0 H	+12.0 H	+13.0 H	+14.0 H	+15.0 H
Latvia	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Lebanon	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Lesotho	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Liberia	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Libya	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Liechtenstein	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Lithuania	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Luxembourg	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Macedonia	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Madagascar	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Malawi	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Malaysia	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H
Maldives	+5.0 H	+10.0 H	+11.0 H	+12.0 H	+13.0 H
Mali Republic	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Malta	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Marshall Islands	+12.0 H	+17.0 H	+18.0 H	+19.0 H	+20.0 H
Mauritania	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Mauritius	+4.0 H	+9.0 H	+10.0 H	+11.0 H	+12.0 H
Mayotte	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Mexico East	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
Mexico Central	-6.0 H	-1.0 H	+0.0 H	+1.0 H	+2.0 H
Mexico West	-7.0 H	-2.0 H	-1.0 H	+0.0 H	+1.0 H
Moldova	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Monaco	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Mongolia	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H

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

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

Country	UTC	Eastern	Central	Mountain	Pacific
Uganda	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Ukraine	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
United Arab Emirates	+4.0 H	+9.0 H	+10.0 H	+11.0 H	+12.0 H
United Kingdom	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Uruguay	-3.0 H	+2.0 H	+3.0 H	+4.0 H	+5.0 H
USA Eastern	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
USA Central	-6.0 H	-1.0 H	+0.0 H	+1.0 H	+2.0 H
USA Mountain	-7.0 H	-2.0 H	-1.0 H	+0.0 H	+1.0 H
USA Western	-8.0 H	-3.0 H	-2.0 H	-1.0 H	+0.0 H
USA Alaska	-9.0 H	-4.0 H	-3.0 H	-2.0 H	-1.0 H
USA Hawaii	-10.0 H	-5.0 H	-4.0 H	-3.0 H	-2.0 H
Uzbekistan	+5.0 H	+10.0 H	+11.0 H	+12.0 H	+13.0 H
Vanuatu	+11.0 H	+16.0 H	+17.0 H	+18.0 H	+19.0 H
Vatican City	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Venezuela	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Vietnam	+7.0 H	+12.0 H	+13.0 H	+14.0 H	+15.0 H
Wallis & Futuna Is.	+12.0 H	+17.0 H	+18.0 H	+19.0 H	+20.0 H
Yemen	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Yugoslavia	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Zaire	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Zambia	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Zimbabwe	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H

APPENDIX C: CONVERSION CHARTS

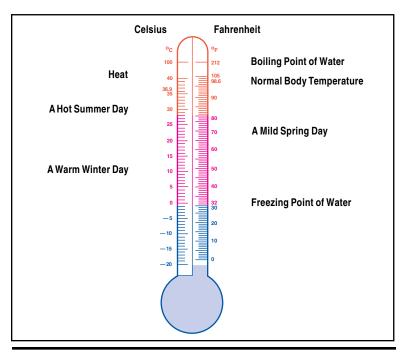
When You Know

Units of Length	Multiply by	To find
Millimeters	0.04	Inches
Centimeters	0.39	Inches
Meters	3.28	Feet
Meters	1.09	Yards
Kilometers	0.62	Miles
Inches	25.40	Millimeters
Inches		Centimeters
Feet	30.48	Centimeters
Yards	0.91	Meters
Miles	.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 Wei	ght	
Grams	0.035	Ounces
Kilograms	2.21	Pounds
Tons (100kg)	1.10	Short Tons
Ounces	28.35	Grams
Pounds	0.45	Kilograms
Short Tons	2.12	Tons

Units of Volume	Multiply by	To find
Milliliters	0.20	Teaspoons
Milliliters	0.06	Tablespoons
Milliliters	0.03	Fluid Ounces
Liters	4.23	Cups
Liters	2.12	Pints
Liters	1.06	Quarts
Liters	0.26	Gallons
Cubic Meters	35.32	Cubic Feet
Cubic Meters	1.35	Cubic Yards
Teaspoons	4.93	Milliliters
Tablespoons	14.78	Milliliters
Fluid Ounces	29.57	Milliliters
Cups	0.24	Liters
Pints	0.47	Liters
Quarts	0.95	Liters
Gallons	3.79	Liters
Cubic Feet	0.03	Cubic Meters
Cubic Yards	0.76	Cubic Meters
Units of Speed		
Miles per Hour	1.61	Kilometers per Hour
Km per Hour	0.62	Miles per Hour

Temperature

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



Temperature Chart

APPENDIX D: HOLIDAYS AND CALENDAR

Religious Holidays

Religious holidays follow the Muslim lunar calendar, and consequently the Western date for these observances fall on different days every year. Each year, they will fall roughly eleven days earlier than they did the previous year, but the exact dates depend on various astrological observances by the religious authorities as the holiday approaches.

Holidays with Variable Dates:

21-22 September 2009

8-9 September 2010

29-30 August 2011

Eid al-Adha 8-9 December 2008

28-29 November 2009 15-16 November 2010

5-6 November 2011

Islamic New Year 29-30 December 2008

18-19 December 2009

6-7 December 2010

National Holidays

New Year's Day 1 January Saudi National Day 23 September

Islamic Calendar

The Islamic calendar is made up of 12 lunar months. The Islamic year is considered to have started at sunset of Thursday, 15 July 622 in the Julian calendar and has 12 months of alternately 29 and 30 days, the last month having 30 days only in leap years.

	Month	Days		Month	Days
1	Muharram	30	7	Rajab	30
12	Safar	29	8	Sha'ban	29
3	Rabi' I	30	9	Ramadan	30
4	Rabi' II	29	10	Shawwal	29
5	Jumada I	30	11	Dhu al Qa'da	30
6	Jumada II	29	12	Dhu al Hijja	29/30

APPENDIX E:

LANGUAGE

Key Phrases

English Arabic

Can you help me? *momkin tisa'idini?*

Do you speak English? haal taataakaalaam Englizi?

Excuse me asfaa

Good evening maasa alKher
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 understand aana 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

No smoking! maamnoo' al taadkheen!

Please min faadlaak

Thank you shokran

Welcome aahlaan wa saahlaan

English Arabic What? ma?

What does this mean? ma maa'ni haaza? What is this? ma esm haaza?

When? maati?
Where? aayn?
Which? ay?
Who? maan?
Why? limaza?

With the grace of God al hamdu allah

Yes Aywaa

Vocabulary

English Arabic Arm (body) zaara' Bandage aasaabe Beach al shati Blanket Baataniye Book ketah **Boots** boot al koobri Bridge

Bridge al koobri
Building al maabni
Coat mi'taf
Entrance Dokhool
Exit khorooj

First Aid Kit ilbah is'aafaat aawaalliyaa

Flashlight baatariyaa
Gloves jowanti
Gulf al khaalij

EnglishArabicHarboral minaHatkobaa'aaHeadraa'aas

Highway taarig Hospital mostaashfi

Insect Repellent tarid lilhaashaarat

Knife saakin Leg sag khaarita Map Market Sook English Arabic Matches ood sagab Medicine Daava' al jami' Mosque Police bolis

Radio

River al naahr
Soap saboon
Sea al baahr
Seacoast shati al Baahr

Shoes hiza
Taxi taaksi
Toilet al twaaleet
Tower al borj
Watch sa'aah
Big kaabir
Small saagir

radyo

Arabic **English** Slow *bati*

Early mohaakir Late mit'akher Near Kaarih Far baa'id Hot sakhen Cold Barid Heavy taagil Light khaafif Open maaftuh Shut maa'ful Right sahh Wrong gaalaat Old gaadim New Jaadid

Military Vocabulary

Air Defense

English Arabic Aircraft ta'ereh

Aircraft Carrier hameleh ta'erat

defa' javi Airfield motar Ammunition zaakhireh **Amphibious** baar ma'i

Antiair artillery maadfa'iyeh modade al ta'erat

Antilanding Defense defa' zed al aabrar

Antitank artillery maadfa'iyeh modade al daababat

jish Army

English Arabic

Artillery maadfa'iyeh

Aviation tiran
Battalion kaatibeh
Battleship baraajeh
Bomb gaanbaaleh

Cruiser (ship) torad

Camouflage

Chemical Weapon saalah Kimavi Coastal Defense defa' saheli

taamooyeh

Corps filg

Destroyer (ship) maadmor
Division Faaraageh
Engineer Mohandes
Garrison Hamieh
Gun maadfa'

Handgrenade Gaanbeleh aadwiyeh

Headquarters Giadeh
Helicopter Helicoopter
Howitzer Hawetzer
Infantry mosha'e

Latitude khat al aarad
Longitude khat al tool
Machinegun Reshash
Map Khaariteh
Military Aaskaaria
Mine Al laagam

Minefield haagl al laagam

Mortar haven

English Arabic

Nuclear Weapon saalah noovi

Platoon faasileh
Radar radar
Reconnaissance 'estaatla'
Rifle bandgiyeh

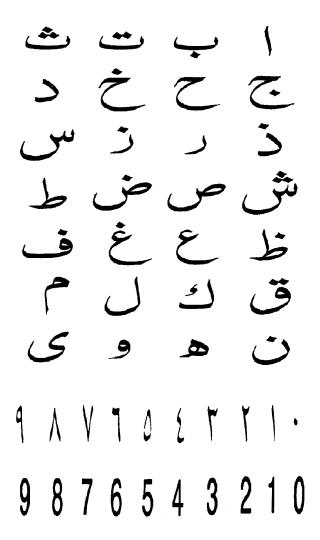
Submachinegun reshash gaasir

Tank daababeh
Tactics taktiki
Torpedo toorpid

Topography toboografia
Weapon saalah

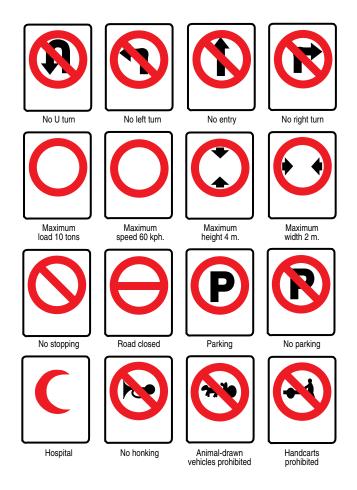
Weapon saalah
Weather Al taages

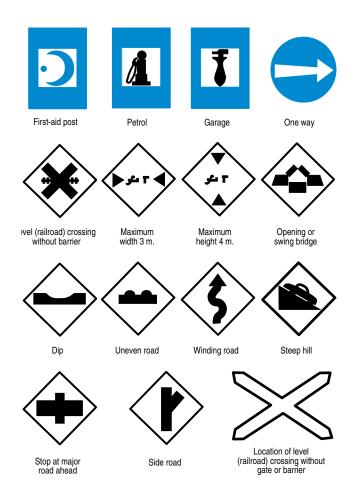
Arabic Alphabet/Numerals



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 intensifies stress. Assistance from medical personnel or chaplains is available.

Additional Information

Water

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

- Adding calcium hypochlorite at 5.0 ppm for 30 minutes;
- Adding Chlor-Floc or iodine tablets according to label instructions;

- Heating water to a rolling boil for 5 to 10 minutes; or
- Adding 2 to 4 drops of ordinary chlorine bleach per quart of water and waiting 30 minutes before using it.

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

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

Rodents

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

- Maintaining a high state of sanitation throughout the unit area;
- Sealing openings 1/4 inch or greater to prevent rodents from entering unit areas;
- Avoiding inhalation of dust when cleaning previously unoccupied areas (mist these areas with water prior to sweeping; when possible, disinfect area using 3 ounces of liquid bleach per 1 gallon of water).
- Promptly removing dead rodents. Personnel should use disposable gloves or plastic bags over the hands when handling

- any dead animal and place the dead rodent/animal into a plastic bag prior to disposal.
- Seeking immediate attention if bitten or scratched by a rodent or if experiencing difficulty breathing or flu-like symptoms.

Insects

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

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

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

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

DoD-approved insect repellents are:

■ IDA KIT: NSN 6840-01-345-0237

■ Permethrin Aerosol Spray: NSN 6840-01-278-1336

■ DEET Insect Repellent: NSN 6840-01-284-3982

Hot Weather

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

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

Sunscreens

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

Work-Rest Table

		EASY	WORK		ERATE ORK	HARD WORK			
Heat Cat	WBGT Index (°F)	Work/ Water Rest Intake (Qt/Hr)		Work/ Rest (min.)	Water Intake (Qt/Hr)	Work/ Rest (min.)	Water Intake (Qt/Hr)		
1	78 – 81.9	NL	1/2	NL	3/4	40/20	3/4		
2	82 – 84.9	NL	1/2	50/10	3/4	30/30	1		
3	85 – 87.9	NL	3/4	40/20	3/4	30/30	1		
4	88 – 89.9	NL	3/4	30/30	3/4	20/40	1		
5	> 90	50/10	1	20/40	1	10/50	1		

The work-rest times and fluid replacement volumes in the specific heat category sustain performance and hydration for at least 4 hours. Individual water needs will vary ±1/4 quart per hour.

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

Caution: Hourly fluid intake should not exceed 1½ quarts. Daily fluid intake should not exceed 12 quarts.

Note: MOPP gear adds 10° to WBGT Index.

Food

High risk food items such as fresh eggs, unpasteurized dairy products, lettuce and other uncooked vegetables, and raw or 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 non-caffeinated 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;

WIN SPE			COOLING POWER OF WIND EXPRESSED AS "EQUIVALENT CHILL TEMPERATURE"																			
KNOTS	МРН	TEMPERATURE (°F)																				
CALM	CALM	40	40 35 30 25 20 15 10 5 0 -5 -10 -15 -20 -25 -30 -35 -40 -45 -50 -55 -60																			
			EQUIVALENT CHILL TEMPERATURE																			
3 - 6	5	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	-55	-60	-70
7 - 10	10	30	20	15	10	5	0	-10	-15	-20	-25	-35	-40	-45	-50	-60	-65	-70	-75	-80	-90	-95
11 - 15	15	25	15	10	0	-5	-10	-20	-25	-30	-40	-45	-50	-60	-65	-70	-80	-85	-90	-100	-105	-110
16 - 19	20	20	10	5	0	-10	-15	-25	-30	-35	-45	-50	-60	-65	-75	-80	-85	-95	-100	-110	-115	-120
20 - 23	25	15	10	0	-5	-15	-20	-30	-35	-45	-50	-60	-65	-75	-80	-90	-95	-105	-110	-120	-125	-135
24 - 28	30	10	5	0	-10	-20	-25	-30	-40	-50	-55	-65	-70	-80	-85	-95	-100	-110	-115	-125	-130	-140
29 - 32	35	10	5	-5	-10	-20	-30	-35	-40	-50	-60	-65	-75	-80	-90	-100	-105	-115	-120	-130	-135	-145
33 - 36	40	10	0	-5	-10	-20	-30	-35	-45	-55	-60	-70	-75	-85	-95	-100	-110	-115	-125	-130	-140	-150
Winds A 40 MPH Little Add Effe	Have ditional	LITTLE INCREASING DANGER DANGER Flesh may freeze within 1 minute Flesh may freeze within 30 seconds																				

- Dress in layers, wear polypropylene long underwear, and use sunglasses, scarf, unscented lip balm, sunscreen, and skin moisturizers;
- Insulate themselves from the ground with tree boughs or sleeping mats and construct windscreens to avoid unnecessary heat loss;
- Seek immediate medical attention for loss of sensitivity in any part of the body.

First Aid

Basic Lifesaving

Those caring for injured persons should immediately:

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

Injuries and Care

Shock

Symptoms

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

Treatment

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

Abdominal Wound

Treatment

- Exposed organs should be covered with moist, clean dressing
- Wound should be secured with bandages
- Displaced organs should never be reintroduced to the body

Bleeding

Treatment

- Direct pressure with hand should be applied; a dressing should be used if available
- Injured extremity should be elevated if no fractures are suspected
- Pressure points may be used to control bleeding
- Dressings should not be removed; additional dressings may be applied over old dressings

Tourniquet

NOTE: Tourniquets should only be used when an injury is life threatening.

- A 1-inch band should be tied between the injury and the heart, 2 to 4 inches from the injury, to stop severe bleeding; wire or shoe strings should not be used
- Band should be tight enough to stop bleeding and no tighter

- Once the tourniquet is tied, it should not be loosened
- The tourniquet should be left exposed for quick visual reference
- The time that the tourniquet is tied and the letter "T" should be written on the casualty's forehead

Eye Injury

Treatment

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

Chest Wound

Symptoms

- Sucking noise from chest
- Frothy red blood from wound

Treatment

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

Fractures

Symptoms

- Deformity, bruising
- Tenderness
- Swelling and discoloration

Treatment

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

Spinal, Neck, Head Injury

Symptoms

■ Lack of feeling or control below neck

Treatment

- Conscious victims should be cautioned to remain still
- Airway should be checked without moving injured person's head
- Victims who must be moved should be placed, without bending or rotating victim's head and neck, on a hard surface that would act as a litter (door, cut lumber)
- Head and neck should be immobilized

Heat Cramps

Symptoms

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

Heat Exhaustion

Symptoms

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

Heat Stroke

Symptoms

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

Treatment

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

Burns

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

Thermal/First Degree

Symptoms

- Skin reddens
- Painful

Treatment

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

Thermal/Second Degree

Symptoms

- Skin reddens and blisters
- Very painful

Treatment

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

Thermal/Third Degree

Symptoms

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

Treatment

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

Electrical Burns

Treatment

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

Chemical Burns

Treatment

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

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, or Koran, or other religious material for your 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 United States.
- 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 United States and local standards of living or other cultural differences. Avoid taking any photographs from moving buses, trains, or aircraft.

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

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

- Port complexes
- Airports

Detention

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

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

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 hijackings suggest some simple precautions:

■ You should not travel in uniform outside the continental United States on commercial aircraft.

- Before traveling by commercial aircraft, you should screen your wallet and other personal items, removing any documents that could reveal military affiliation (e.g., credit cards and club membership cards). Note that USMC policy requires service members to wear two I.D. tags with metal necklaces while on official business. In addition, service members must carry a current I.D. card at all times. These requirements are valid even while traveling to or through terrorist areas. In view of these requirements, service members must be prepared to remove and conceal these and any other items that could identify them as military personnel in the event of a hijacking.
- You should stay alert to any suspicious activity when traveling. Keep in mind that the less time spent in waiting areas and lobbies, the better. This means adjusting your schedule to reduce your wait at these locations.
- You should not discuss your military affiliation with anyone during your travels because this increases your chances of being singled out as a symbolic victim.
- In case of an incident, you should not confront a terrorist or present a threatening image. The lower your profile, the less likely you are of becoming a victim or bargaining chip for the terrorists, and the better your chances of survival.

Hostage Situation

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

that concern for the welfare of family members is a source of great stress to kidnap victims.

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

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

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

APPENDIX I: DANGEROUS PLANTS AND ANIMALS

Snakes

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. Its fangs are well-developed and comparatively large in relation to the size of its head. Eyes minute with round pupils. Tail short, ending 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 as soon as it is touched.

Venom's effects:

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

Puff Adder

Description:

Adult length usually 0.6 to 1 meter (2-3 feet), maximum of 1.5 meters (5 feet); thick, heavily built snake. Background color var-

ies from bright to light yellow, yellow-brown, orange-brown, light brown, or gray. Belly yellowish white to gray with black blotches. Rough-scaled appearance and alternating pattern of dark and light chevron-shaped markings.



Habitat:

Most widely distributed

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

Activity and behavioral patterns:

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

Venom's effects:

Many serious bites reported; only a small portion prove fatal. Venom is potent cytotoxin, attacking tissue and blood cells. Symptoms include extreme pain with swelling and large blisters in region of the bite.

Gasperetti's Horned Desert Viper

No Photograph Available

Description:

Adult length usually 0.3 to 0.6 meter, maximum of 0.85 meter. Background generally yellowish, yellowish brown, pale gray, pinkish, or pale brown with rows of dark spots along the back.

Belly whitish. Tip of tail may be black. May have a long spine-like horn above each eye.

Habitat:

Found in deserts with rock outcroppings and fine sand. Often in very arid places, however, may be found near oases.

Activity and behavioral patterns:

Nocturnal. Can make itself almost invisible by wriggling down into loose sand. Hides in rodent holes and under stones. When angered, rubs inflated loops of body together to make rasping hiss. Can strike quickly if disturbed.

Venom's effects:

Venom primarily hemotoxic. Local symptoms include pain, edema, redness, possible hematoma at site of bite.No fatalities reported.

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.

Burton's Carpet Viper Description:

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



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

Habitat:

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

Activity and behavioral patterns:

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

Venom's effects:

Venom highly toxic to humans; reports of biting incidents common. Venom primarily hemotoxic; causes internal and external hemorrhaging. Bite causes pain and swelling at site.

Egyptian Carpet Viper Description:

Adult length usually 0.3 to 0.6 meter (1-1.5 feet); relatively stout snake. Background color variable, usually yellowish, brown, gray, or reddish; may have a series of oblique pale crossbars, interspersed with dark spaces along back. Usually has rows of triangular or circular markings with pale



or white edging along each side. Some specimens with faded or barely visible markings. Belly pale, usually with brown or reddish spots. Head pear-shaped.

Habitat:

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

Activity and behavioral patterns:

Terrestrial, although occasionally climbs into low bushes to avoid hot or wet surfaces. Moves quickly. Primarily nocturnal. Hides in holes, under logs, rocks, and brush piles during day; may partially bury itself in sand or coil in or around grass tufts. When confronted, quickly assumes figure-eight coil, rubbing inflated loops of body together to make a distinctive noise similar to sawing wood.

If further agitated, will strike continuously and vigorously; may even move toward an aggressor.

Venom's effects:

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

Desert Black Snake

Description:

Adult length usually 0.9 meter to 1.2 meters; moderately stout snake. Background color generally glossy black sometimes with brownish tinge; belly more pale.



Habitat:

Various habitats, including open desert, cultivated

fields, gardens, oases, irrigated areas, and around buildings. Also barren, rocky mountain hillsides and sandy desert with sparse brush.

Activity and behavioral patterns:

Nocturnal; spends much time underground. Can be very aggressive. When molested, threatened, or provoked, will hiss violently and strike.

Venom's effects:

Venom strongly neurotoxic.

Sochurek's Saw-scaled Viper

No Photograph Available

Description:

Maximum length of 0.8 meter. Background color gray-beige; belly whitish, usually with dark gray spots. Series of pale, dark-edged

dorsal spots, which may connect in zig-zag line. Incomplete undulating pale line along sides. Distinctive gray cross pattern on top of head.

Habitat:

Very adaptable. Found in sandy, rocky, and cultivated areas. Avoids wet terrain, but may enter water if necessary.

Activity and behavioral patterns:

Primarily nocturnal and terrestrial; but climbs low bushes and trees.

Venom's effects:

Potent hemotoxin. Pain and swelling start soon after bite. Systemic bleeding may start within 6 hours after bite. Other symptoms may include vomiting, abdominal pain, regional lymph node enlargement, hematuria, and shock. Deaths recorded.

Montpellier Snake

Description:

Adult length usually 1.2 to 1.5 meters, maximum of 2.5 meters; moderately slender snake. Background color generally blackish, grayish, brown, or olive; belly yellowish white.



May have indistinct pattern of brown spots along sides. Head distinctive; large eyes, roof-like supraorbital scales, and prominent rostral scale.

Habitat:

Dry, open, or stony areas, with low bushy vegetation, or semi desert areas along coast. Found at elevations greater than 2,000 meters.

Activity and behavioral patterns:

Diurnal. Aggressive; will bite if pestered or restrained. Savage biter.

Venom's effects:

Venom toxic. Bite may cause immediate pain, stiffness, swelling, and fever. Neurological symptoms, such as central nervous system depression, ptosis, and paresis of affected limb, observed in severe cases.

Egyptian Cobra

Description:

Adult length usually 1.5 to 2 meters (5-6.5 feet), maximum of 3 meters (10 feet). Background color usually yellow-gray to brown or blue-black, but extremely variable. Belly



yellowish with dark blotches. Most specimens have dark brown or black band across the throat.

Habitat:

Various habitats include flat land, scrubby bushes, grass clumps, irrigated fields, rocky hillsides, old ruins, and in vicinity of 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 molested, will rear and spread an impressive hood up to 12 centimeters (4.7 inches) across.

Venom's effects:

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

False-horned Viper

Description:

Adult length usually 0.5 to 0.7 meter, maximum of 0.9 meter. Background generally pale or bluish gray to khaki; gray or brown-gray blotches or



crossbands on back. Alternating faint spots on throat and body sides. Ventral side white; tail black. Head very broad; distinct from neck. Horn, composed of several overlapping scales, above each eye.

Habitat:

Most often found in desert bush. Also found in sandy, rocky terrain, as well as burrows and crevices in elevations of up to 2,000 meters.

Activity and behavioral patterns:

Nocturnal. Sluggish, placid, less likely to bite during the day. Dangerously active and aggressive at night. When disturbed, hisses loudly but not particularly vicious. Locomotion characteristically sidewinding. Frequently hides in rodent tunnels and beneath rocks.

Venom's effects:

Primarily neurotoxic. May produce a few local symptoms such as minor pain, mild tingling of the local area, stiffness; more serious bites cause weakness followed by ptosis. Victim may be conscious, but be unable to respond due to paralysis.

Dangerous Invertebrates

Fat-tailed Scorpion

Although scorpions in the region are capable of inflicting a painful sting, only the Fat-tailed scorpion is known to be life-threatening.

Habitat:

Found in dry and desert areas, usually in stony soils, cactus hedges and arid mountainous regions and high plateaux. Also found on steep slopes of drifting sand dunes. Avoids humidi-



ty. Often found near human habitations (such as in cracks in walls).

Venom's effects:

One of the most potent scorpion venoms in the world. Species causes several deaths each year.

Spiders

Although there are several spider species found in the region that are capable of inflicting a painful bite, including some very large and physically imposing tarantulas, none are known to be life-threatening.



Insects

There is little specific information of medical importance regarding insects. However, nearly all countries have at least one species of moth having venomous/urticating hairs and/or whose larva (caterpillar) has venomous spines. Some caterpillars are very hairy (such as puss moths and flannel moths) and almost unrecognizable as caterpillars, with long silky hairs completely covering the shorter venomous spines. Others bear prominent clumps of

still, venomous spines on an otherwise smooth body. Contact with these caterpillars can be very painful. Some are brightly colored.

Paederus are small (usually 4 to 7 millimeters), slender rove beetles that do not look like typical beetles and have very short wing covers that expose most of their flexible abdomens. When crushed, their body fluid contains an agent that will blister skin on contact. The lesions take about a week to heal and the area remains painful for several weeks. The substance is extremely irritating if it gets into the eyes; temporary blindness has been reported.

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

Dangerous Plants

Desert Rose

Other names:

Monkey poison, mock azalea, impala lily.

Mechanisms of toxicity:

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



Comments:

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

Panama Tree

Other names:

Castano, tartargum.

Mechanisms of toxicity:

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

Comments:

There are 200 tropical species.



English Yew

Other names:

Ground hemlock, American yew, Japanese yew.

Mechanisms of toxicity:

Taxine A and B, classed as steroid alkaloids, are present in all plant parts except the aril. A single chewed



seed is deadly. An hour after ingestion, nausea, dizziness, and abdominal pain begin. This is followed by reddening of the lips, dilatation of the pupils, shallow breathing, tachycardia, and coma. Then the pulse slows, blood pressure drops, and death occurs through respiratory paralysis. No proven treatment exists. Emptying the stomach hours after ingestion may be helpful as leaves may not pass through the GI tract expeditiously. Various clinical

measures (circulatory stimulants, artificial respiration, cardiac pacemaker) have not prevented death in suicide cases.

Comments:

An evergreen shrub or small tree bearing a characteristic fleshy, red, sweet-tasting aril with a single green to black, partly exposed, hard-shelled seed within. In North America, the Japanese yew, the toxicity of which may exceed that of the English yew, has repeatedly caused fatal animal poisonings. Was once known as the "tree of death."

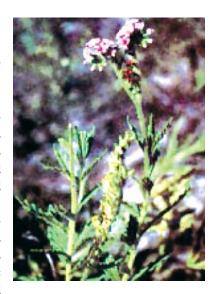
Heliotrope

Other names:

Cherry pie, scorpion's tail, Indian heliotrope.

Mechanisms of toxicity:

Contains pyrrolizidine alkaloids. Cause of large epidemics (Afghanistan, India) of illness following ingestion of bread made with flour contaminated with members of this genus. The pathologic effects (Budd-Chiari syndrome) take weeks to months, and death comes slowly over years. Chronic copper poisoning has occurred associated with this plant.



Comments:

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

Velvet Bean

Other names:

Cowitch, cowhage, picapica, ox eye bean, horseeye bean.

Mechanisms of toxicity:

Many of the species' pods and flowers are covered with irritant hairs (prote-



olytic enzymes). Can be dangerous if they become embedded in the eye. Beans tend to be foul tasting, even after thorough boiling, so little danger of ingestion exists.

Comments:

Many species are widely naturalized.

Bushman's Poison

Other names:

Poison tree, wintersweet.

Mechanisms of toxicity:

Seeds have a high concentration of toxin (cardiac glycosides); fruit pulp contains only traces. Wood extract is easily absorbed through the skin; can be



mixed with latex from one of the Euphorbia family and gum from Acacia to make arrow poison; also used as an ordeal poison. Extracts applied to prickly fruits and laid in paths of barefoot enemy to kill. Symptoms of toxicity include pain, nausea/vomiting, abdominal pain, diarrhea. Variable latent period (interval between exposure and symptoms) with cardiac conduction defects and

sinus bradycardia; hyperkalemia. Some species cause dermatitis, but this is not a common problem.

Comments:

Dense evergreen shrubs or small trees with a milky sap found in Arabia and tropical eastern and southern Africa. Fruit resembles an olive or small ellipsoidal plum and turns reddish to purple-black at maturity (one to two seeds). Fruit exudes a milky sap when cut. Aromatic flowers are tubular, white/pink, in dense clusters in the forks of the leaves.

APPENDIX J: INTERNATIONAL TELEPHONE CODES

Algeria	213	Malta	356
Australia	61	Mexico	52
Austria	43	Morocco	212
Bahrain	973	Netherlands	31
Belgium	32	Nigeria	234
Brazil	55	New Zealand	64
Canada	1	Norway	47
China	86	Oman	968
Cyprus	357	Philippines	63
Denmark	45	Portugal	351
Djibouti	253	Qatar	974
Egypt	20	Republic of Korea	82
Ethiopia	251	Saudi Arabia	966
Finland	358	Senegal	221
France	33	Seychelles	248
Gabon	241	Singapore	65
Germany	49	Somalia	252
Greece	30	South Africa	27
Hawaii	1	Spain	34
Hong Kong	852	Sweden	46
Indonesia	62	Switzerland	41
Iran	98	Syria	963
Iraq	964	Taiwan	886
Ireland	353	Tanzania	255
Israel	972	Thailand	66
Ivory Coast	225	Tunisia	216
Japan	81	Turkey	90
Jordan	962	UAE	971
Kenya	254	United Kingdom	44
Kuwait	965	United States	1
Libya	218	Yemen	967
Madagascar	261	Zambia	260
Malaysia	60	Zimbabwe	263
AT&T (public phones)	0072-911 or 0030-911	On Base	550-HOME or 550-2USA