Senegal Country Handbook

1. This handbook provides basic reference information on the Senegal, 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 the Senegal.

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

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Senegal

KEY FACTS

Official Name. Republique du Senegal
Common Name. Senegal

Flag: Three vertical bands of green, yellow, and red; a green star is centered on the yellow stripe.

Head of State: Abdoulaye Wade, since March 2000.

Capital: Dakar

Time Zone: UTC (formerly GMT)

Population: 9,987,494 (July 2000 est.)

Languages: French is the official language. Wolof is the dominant tribal language. Other languages used include Pulaar, Serer, Jola, and Mandinka.

Currency: Communaute Financiere Africaine franc (CFAF) = 100 centimes
Rate: US$1= 713.612 CFAF (as of 21 May 2002)

National Flag

U.S. MISSION

U.S. Embassy

Local Address	Avenue Jean XXIII and Rue Kleber, Dakar
Mailing Address	B.P. 49, Dakar, Senegal
Phone	(221) 822-4599 (221) 823-4296 (221) 823-4604 (after hours)
Fax	(221) 822-2991
Hours	Monday-Friday: 1300-1600 Closed on American and Senegalese holidays.

Travel Advisories

The U.S. Embassy in Dakar advises U.S. citizens to defer travel to the Casamance region of southern Senegal due to incidents involving Casamance separatists. Fighting has increased between Casamance separatists and the Senegalese military. A number of Senegalese military personnel, separatists, and civilians have been killed.

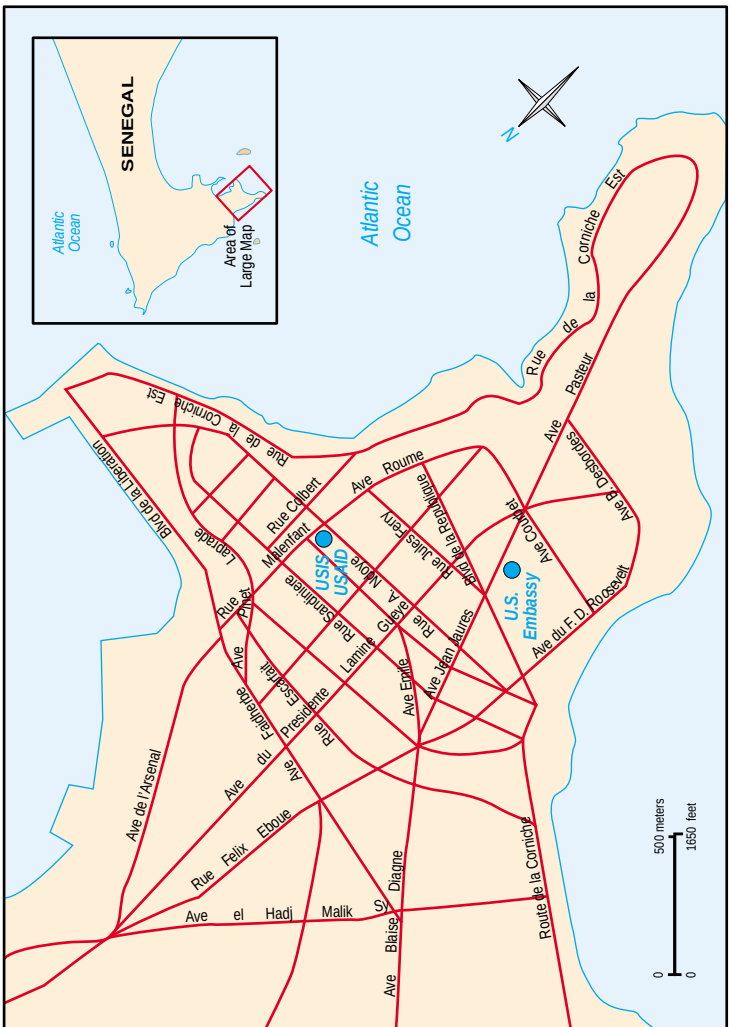
U.S. government personnel near Casamance have relocated pending developments and travel to the area is restricted. U.S. citizens considering travel to the Casamance area should contact the U.S. Embassy in Dakar for the latest travel and security information.

Road travel between Mauritania and Senegal is restricted to several designated border-crossing points. Long delays at the border are normal.

The potential for violence requires U.S. citizens to maintain security awareness and avoid political gatherings and street demonstrations.

Entry Requirements

A passport and proof of yellow fever vaccination are required for entry to Senegal. A visa is not required for stays of fewer than 90 days.



Location of U.S. Embassy in Dakar

Contracting malaria is a risk throughout Senegal; travelers should take antimalarial drugs.

Customs Restrictions

Customs officials restrict a number of items from import to Senegal. Computers and computer parts, video cameras and players, stereo equipment, tape players, auto parts, and various tools and spare parts cannot be brought into Senegal without clearance by Senegalese customs officials. Airport customs officials will hold such items if brought as baggage or carry-on luggage. Export of local currency is limited to CFAF 20,000. Tourists are prohibited from bringing weapons or ammunition into Senegal.

Travelers cannot obtain cash from automated teller machines in Senegal. Travelers can obtain cash and/or traveler's checks by presenting their credit card at a local financial institution sponsoring their card.

GEOGRAPHY AND CLIMATE

Geography

With an area of 196,840 square kilometers (76,000 square miles), Senegal is approximately the size of South Dakota. Senegal's coastline is 531 kilometers- (330 miles-) long and is interrupted by The Gambia's coastline. Senegal has desert or grasslands in the north and heavier vegetation in the south and southeast. Most of Senegal has irregular rainfall amounts and poor soil.

Boundaries

Senegal is bounded by the Atlantic Ocean to its west. Land boundaries and their lengths follow:

- Mauritania, to the north, 813 kilometers-long on the Senegal River.
- Mali, to the east, 419 kilometers-long.

Africa

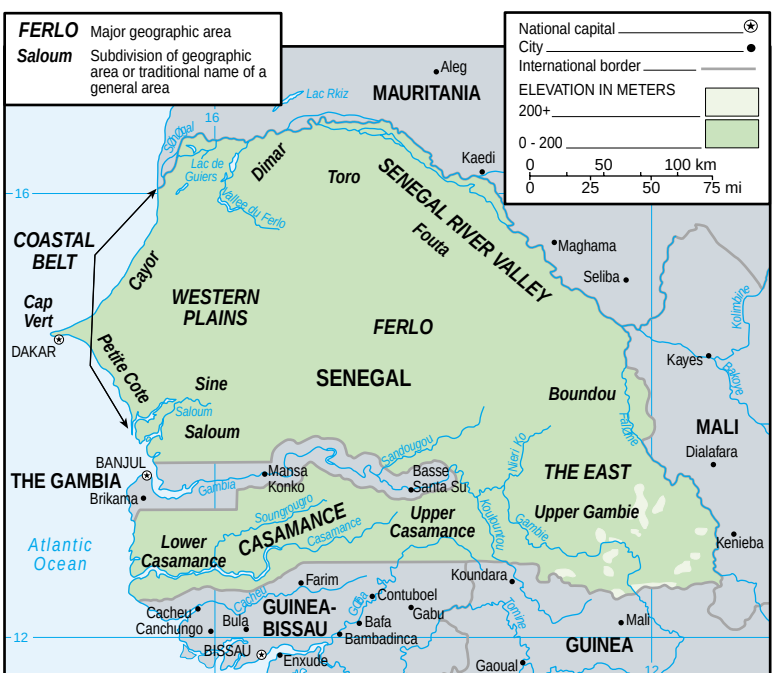
- Guinea, to the south, 330 kilometers-long.
- Guinea-Bissau, to the south, 338 kilometers-long.

Senegal also shares a 740-kilometer border with The Gambia. The Gambia penetrates more than 320 kilometers into Senegal from the Atlantic coast, nearly bisecting it into northern and southern zones.

Senegal's maritime boundary consists of 12 nautical-miles of territorial waters and a 24 nautical-mile exclusive economic zone (EEZ). Senegal has maritime agreements that designate clear boundaries with The Gambia, Guinea-Bissau, and Cape Verde. A clear maritime boundary with Mauritania has yet to be designated.

Topography

Senegal has relatively flat terrain that is susceptible to heavy flooding along major waterways. Several species of mangrove grow in flooded areas along the river estuaries. Depending on the species, they can reach



Topography and Drainage

heights of up to 40 meters. They tend to thrive in saline environments, but over-salination can kill them.

Senegal can be divided into six topographical divisions: the coastal belt, the Senegal River valley, the western plain, the Ferlo, the Casamance, and the east.

The coastal belt extends 15 kilometers inland from Senegal's coast from the Senegal River to Cap Vert then narrows between Dakar and the Saloum River. The wider portion, known as the Cayor, is sandy. Dunes up to 30 meters (100 feet) high, with clay-soiled depressions interspersed among them, back its beaches. During the rainy season, the depressions become swamps or lakes; during the dry season, they become vegetated mounds. Approaching the Cap Vert peninsula, the dunes become less continuous. Between Dakar and the Saloum River, often referred to as the Petite Cote, the belt narrows and a gradual

Dakar Coast

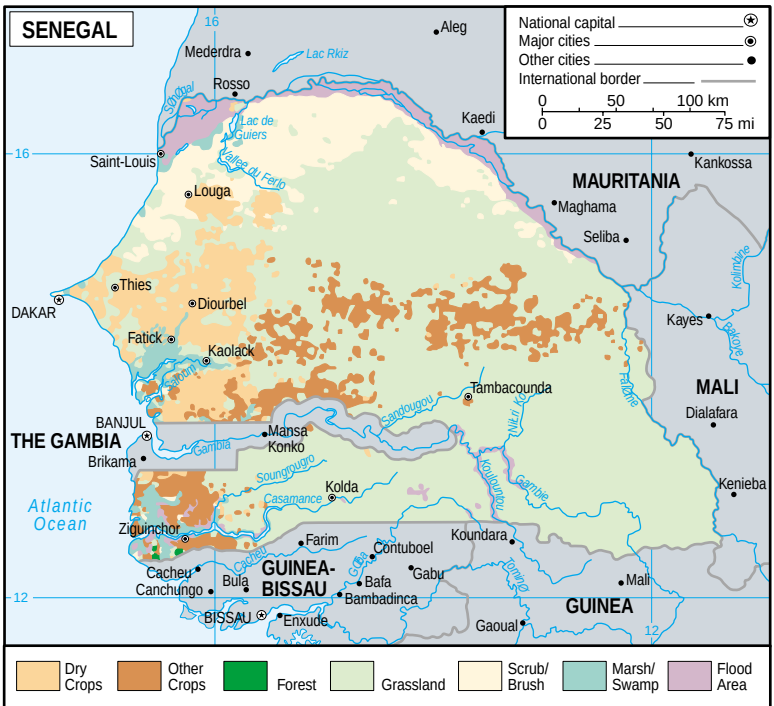
increase in elevation behind the dunes gives rise to low wooded hills lined with mangrove trees. Just north of the Saloum River, the belt becomes a maze of creeks, channels, and flat, swampy islands with mangrove thickets.

The Senegal River valley is confined to the northernmost area of Senegal. It extends southward into the lower elevations 16 to 18 kilometers in the east and widens up to 65 kilometers (40 miles) toward the west. Its red-brown soil with good organic content hardens during the dry season. Although this area gets fewer than 300 millimeters (12 inches) of rain annually, it receives this in a torrential downpour causing annual flooding. The water flows along the many channels, flooding the adjacent lowlands, and creating marshes.

The western plains is situated between the Ferlo Valley River and The Gambia's northern border. It consists of a small group of hills with elevations approximately 60 meters (200 feet) above sea-level northwest of Thies and lowlands that extend eastward from Thies to Kaolack. The sandy soil is very loose and easily depleted, yet permeable and adequate for peanut cultivation. Clay accumulates in the swamps and floodplains. During the dry season, the area is nearly barren except for stunted bushes and sparse grasses. After the first rains that fall in June, new grasses and agricultural areas come to life.

The Ferlo consists of savannah covering the area between the Senegal River and along The Gambia and Mauritania borders. Its soil varies, but generally it is sandy and low in organic content. This region has a very short rainy season that allows for only sparse vegetation consisting of scrub, thorn trees, and yellow tuft grass. The terrain is relatively flat and has a few shallow depressions.

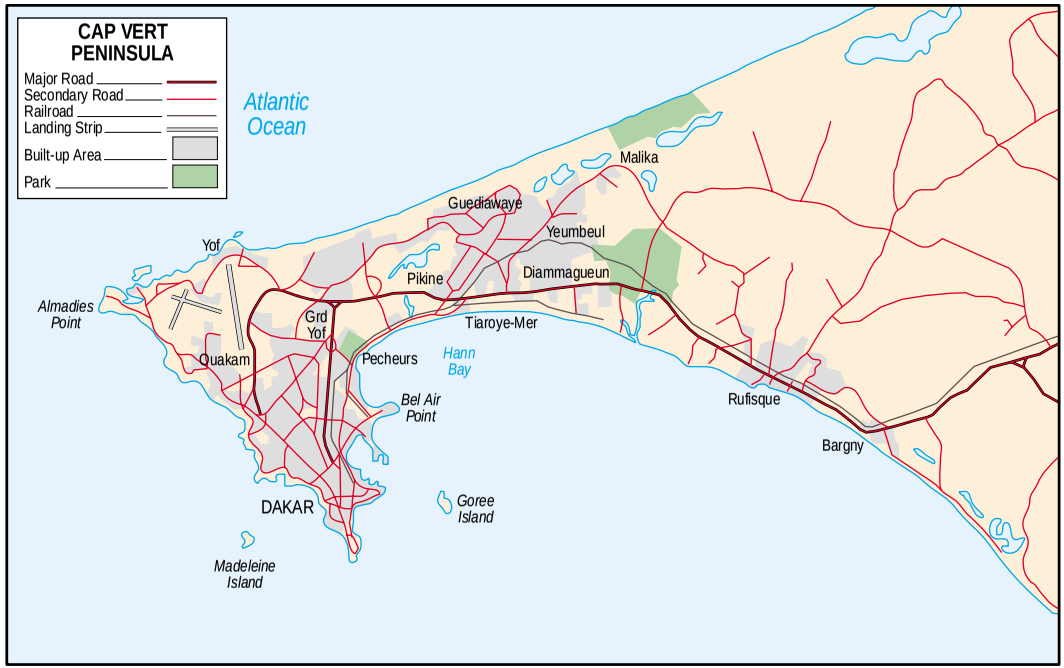
The Casamance area is in Senegal's southernmost region and extends eastward toward the Gambie River. It consists of a series of flat valleys, which are heavily susceptible to flooding interspersed among low hills. The whole area is a mass of tributaries, canals, and meandering streams. The soil is generally acidic and its vegetation consists of mangroves,



Land Use

thick forest, and oil palms. The eastern and central portion consists of savannah with poor soil. Senegal's highest elevations, with ridges exceeding 1,300 feet, are found in the southeast corner, between the Gambie River and the Guinea border.

The eastern division extends from the Ferlo to the Mali and Guinea borders. It includes the Faleme River and a few short tributaries from the Gambie River. Its climate is similar to the Ferlo except its rainfall is greater at the south end of the plain and it is susceptible to wider temper-



Cap Vert Peninsula

ature ranges. Its uncultivable soil consists of impenetrable weak laterites that are low in organic content and high in iron and aluminum oxide. Vegetation consists of scrub growth.

The 1,425 square kilometer (550 square mile) capital city of Dakar is built on the Cap Vert peninsula. The southern portion contains the majority of the city, with cliffs and coves along the ocean side and the main port area along the sheltered eastern flank. The suburbs spread north and west towards the airport. The peninsula includes Almadies Point Africa's westernmost point.

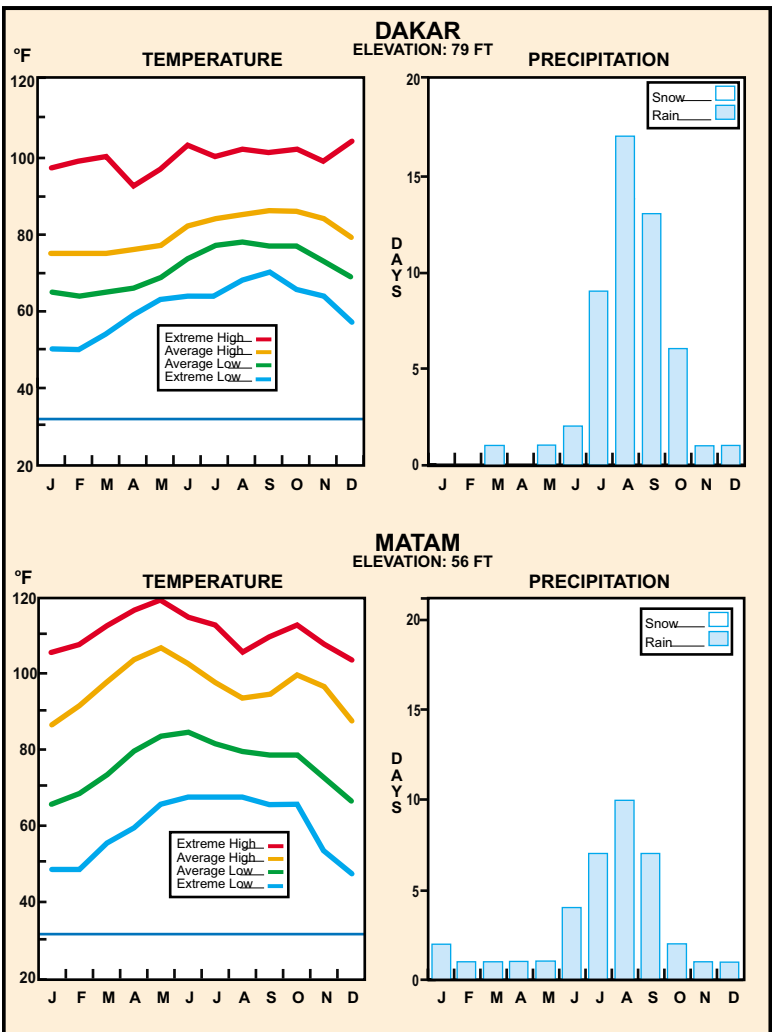
Other major cities include: Thies, Kaolack, Ziguinchor, and Saint-Louis.

City	Population	City	Population
Dakar	1,641,358	Ziguinchor	161,680
Thies	216,381	Saint-Louis	132,499
Kaolack	193,000		

Climate

Senegal's winds, generated by the dry and dusty harmattan winds of the central Sahara, prevail from the northeast. Surface winds generally average 2 to 4 mph; 10 mph trade winds blow along the northwest coast. The winds subside at night, but generally strengthen at dawn and become strongest during the afternoon. Gale force winds generally occur during the rainy season.

Senegal has three climatic regions. The coastal region has a mean minimum temperature of about 17° C (63° F) in January and a mean maximum temperature of about 27° C (81° F) in May, with an annual rainfall of 510 mm (20 inches). The Sahelian region, which encompasses the Senegal River Valley, the Western Plains, and the Ferlo, has a mean daily minimum temperature of about 14° C (57° F) in January and a mean daily maximum of approximately 35° C (95° F) in May. November through May marks the dry season; most rainfall occurs from July through October, averaging about 360 millimeters (14 inches) annually. The Casamance region has a generally hot, humid climate,



Dakar and Matam Weather

with mean annual rainfall varying from 760 millimeters (30 inches) to 1,270 millimeters (60 inches). Its rainy season occurs from May to October. Rainfall is relatively high and dependable in the southern part of the country, but the north has experienced a considerable climatic shift during the past 25 years, making crop and livestock production less reliable. Tides are semi-diurnal on the Senegal coast, with two or more high water periods per tidal day.

Environment

Contamination of water by raw sewage is widespread in Senegal. Household waste is dumped into the ocean or into canals leading to the ocean. The country's forestry resources cover 20 percent of the land, but tree cover has been seriously depleted by drought and deforestation to obtain wood for fuel. Soil stability, and possibly the climate, has been adversely affected by deforestation. Over-fishing also remains a major threat to the environment.

TRANSPORTATION AND COMMUNICATION

Transportation

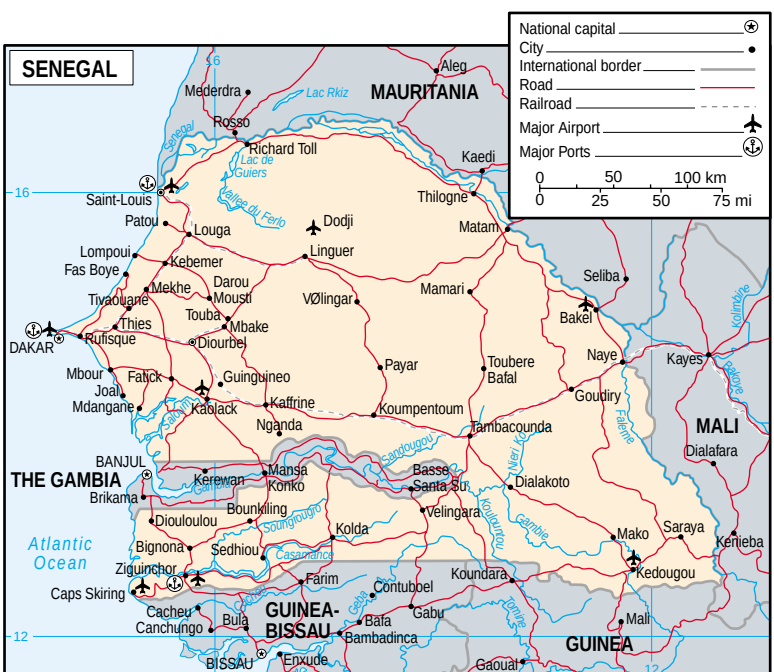
A majority of Senegalese depends on public transportation systems. Private transport primarily consists of bicycles or horses. Very few Senegalese own vehicles; many travel by foot. Traffic flows on the right side of the road. Senegal's roads and railways are insufficient to meet the country's growing passenger and freight transport needs.

Roads

Senegal has a total of 14,576 kilometers of roads of which 4,270 kilometers are paved. A well maintained, two-lane, bituminous-surface highway leads eastward from Dakar for about 40 kilometers (25 miles) along relatively flat terrain to a major road junction in Thies. The port and city are cleared by a well-maintained, two-lane, bituminous surfaced highway that

leads eastward across relatively flat terrain for 20 miles (32 kilometers); then it branches into northern, southern, and eastern routes. The primary routes include: the central highway linking Dakar and Kidira (on the border with Mali); the southern Trans-Gambian Highway, which leads toward The Gambia and the Casamance region; and the northern route toward Mauritania and along the Senegal River valley.

Road conditions in Senegal range from adequate to poor. Paved roads link most major cities but are often in poor repair. Most regions, however, are not interconnected, and road links with neighboring countries, except for Mauritania, are very poor. Many roads become impassable



Transportation Network

Typical Paved and Dirt Road in Senegal

during the rainy season, particularly those leading from the major agricultural centers in the east and southeast. Heavy transport trucks degrade these roads. Drivers should expect to encounter stretches of roadways with potholes and other obstacles. Rural roads range from well maintained dirt and gravel routes to sand routes. Major road rehabilitation projects are under way. Most traffic is found in the Dakar region, and between Dakar and the peanut-producing areas to the north and east. Overcrowded buses travel many roads. Traffic accidents are a leading cause of injury and death in Senegal. Visitors who drive should learn local traffic rules and drive defensively. Travelers should remain on the major hard-surfaced routes and drive during daylight hours only. Visitors should be cautious when using public transportation, particularly if the vehicle appears to be overcrowded and/or poorly maintained.

Transportation between cities is usually provided by buses, or *taxi-brousse* that originate in the train station Pompier in Dakar. Taxis, or *cars-rapides*, provide transportation within larger cities, although they are often crowded.

Rail

Senegal has a 1-meter, narrow gauge railroad network which totals 904 kilometers. Its railway system consists of two main lines running northeast from Dakar to Saint-Louis and east to the border with Mali. The port has 14 miles (22 kilometers) of railroad tracks. Both the port and city are cleared by a double-track, narrow-gauge rail line running eastward to Thies, where it splits into the two main lines of the Senegal Rail System. Kidira is the easternmost terminus of this system. The remaining tracks are single line. The Thies to Saint-Louis line extends 193 kilometers. The total route of the Dakar to Bamako, Mali line is 1,284 kilometers long, it terminates at Koulikoro, Mali. Typically, these trains carry between 4,000 and 5,000 passengers a month. This line branches at Diourbel and extends 46 kilometers northeastward to Taiba. At Guinguineo it again branches into a southwestern route which extends 22 kilometers to Kaolack. All locomotives are diesel powered. Rail repair yards are available.

A frequent push-pull service operates on the 29-kilometer suburban route from Dakar to Thiaroye and Rufisque. A popular route, the service handled 6.3 million passengers in 1996. Domestic rail service from Dakar to Saint-Louis and Kaolack ceased in 1996, though there have been proposals to resume operations. The Bamako express train leaves Dakar twice weekly. It is a 24- to 36-hour trip. In contrast to the international rail links, the national rail line (Thies to Saint-Louis to Kaolack) was discontinued because it was unprofitable.

Air

Senegal has a total of 20 airports, 3 of which are non-operational. Dakar provides the only international service. Dakar's Leopold Sedar Senghor international airport handles around 850,000 passengers and 24,000

metric tons of freight annually. Aeroflot, Air France, Air Italia, Ethiopian Airlines, Iberian Airlines, Royal Air Maroc, Sabena, Saudia Airlines, TAP Air Portugal, Air Afrique, and Tunisian Airlines all have routine service from Dakar. Air Afrique operates direct commercial service from Dakar to New York four times a week. There are plans for a secondary airport to serve Dakar at Keurmassar (30 miles from Dakar). Since 1998, Saint-Louis has been connected by charter flight to France. Air Senegal operates Senegal's domestic air service. In late 1999, Royal Air Maroc agreed to buy 51 percent of the troubled national carrier and to invest in upgrading its small fleet of aircraft. The U.S. Federal Aviation Administration (FAA) has not assessed Senegal's Civil Aviation Authority for compliance with international aviation safety standards for oversight of Senegal's air carrier operations.

The U.S. Embassy receives reports of U.S. citizens and others who are denied boarding due to overbooking on their scheduled Air Afrique flights to the United States. Air Afrique passengers, particularly those traveling on Friday, Saturday, or Sunday, should make flexible travel plans during the months of June through September. Occasionally, checked baggage is delayed significantly. Travelers should include essential items such as medicines, toiletries, and a change of clothing in their carry-on luggage.

Senegal Airports

Airfield Name/ Coordinates	Runway Dimensions (Ft)	Runway Surface/ Condition	Elevation (Ft)	Comments
Bakel 14° 50' 50" N 12° 28' 6" W	5,471 x 98	Macadam/ Poor	95	Civil airfield; used by Air Senegal and Senegalese Air Force; can support limited DC-4 cargo operations year-round; limited lighting on request; taxiway and apron; perimeter fencing; close to roads, railroad, and ocean port
Cap Skiring 12° 24' 36" N 16° 44' 46" W	4,736 x 98	Asphalt/Fair	52	Civil airfield; C-130 capable; taxiway, apron, turnaround, overrun; runway lighting meets ICAO standard. Runway improvements planned.

Airfield Name/ Coordinates	Runway Dimensions (Ft)	Runway Surface/ Condition	Elevation (Ft)	Comments
Djoudj 16° 21' 12" N 16° 16' 25" W	3,441 x 90	Graded Earth/ Fair	15	Use unknown; located in a national park; apron, hangar available.
Dodji 15° 32' 37" N 14° 57' 30" W	5,230 x144	Sand/Poor	66	Military controlled; used by both Senegalese and French military; taxiwa, apron available.
Kaolack 14° 8' 49" N 16° 3' 5"W	5,237 x 98	Asphalt/Fair	26	Civil airfield; C-130 capable; aprons and hangar available; no lighting.
Kedougou 12° 34' 20" N 12° 13' 13" W	5,906 x 148	Asphalt/Fair	584	Civil airfield; C-130 capable; taxiway, apron; limited lighting on request.
Kolda 2° 52' 47" N 14° 57' 22" W	3,891 x 98	Laterite/ Unserviceable	33	Civil airfield; airfield is closed.
Kolda North 12° 53' 55"N 14° 58' 5"W	4,927 x 50	Asphalt/Good	33	Turnarounds, taxiway, and apron available; perimeter fence.
Leopold Sedar Senghor Intl. **14**°44'23"N 17 29' 25"W	Rwy 1: 11,450 x 148 Rwy 2: 4,921 x 98	Asphalt/Good	85	Services civil and military aircraft; French sqdn stationed on airport; 747 capable; turnarounds, taxiways, aprons, hangars, one helipad available; onsite maintenance and fuel storage; perimeter fence. Expansion planned.
Linguere 14° 44' 23" N 17° 29' 25" W	4,550 x 85	Laterite/Fair	118	Civil airfield; C-47 capable; limited lighting on request; near railroad.
Matam **Ouro Sogui** 15° 35' 42" N 13° 19' 25" W	5,648 x 98	Laterite/Fair	85	Civil airfield; Air Senegal conducts scheduled flights; occasionally used by Senegal's Air Force; C-47 capable; lighting available on request.
Podar 16° 40' 41" N 14° 57' 52" W	5,085 x 98	Laterite/Fair	20	Civil airfield; Air Senegal has scheduled flights; C-47 capable; taxiway, apron; lighting available on request.
Ranch de Doli 14° 45' 17" N 15° 9' 3" W	1,100 x 20	Gravel/Fair	150	Private airfield.

Airfield Name/ Coordinates	Runway Dimensions (Ft)	Runway Surface/ Condition	Elevation (Ft)	Comments
Richard Toll 16° 26' 17" N 15° 39' 27" W	5,085 x 115	Laterite/Fair	10	Civil airfield; scheduled Air Senegal flights; taxiway, apron; lighting available on request; hangar available.
Saint-Louis 16° 2' 59" N 16° 27' 40" W	6,234 x 148	Asphalt/Good	9	Civil airfield; C-130 capable; scheduled Air Senegal flights; taxiway, aprons, hangar; runway and taxiway lighting; onsite fuel storage; perimeter fence. Runway expansion planned.
Sefa 12° 48' 41" N 15° 33' 32" W	3,428 x 82	Graded Earth/ Unserviceable	150	Civil airfield; may be used by local authorities; unusable due to vegetative encroachment
Simenti 13° 2' 48" N 13° 17' 43" W	5,901 x 92	Laterite/Fair	171	Civil airfield; only open when Niokolo Koba Zoo is open; taxiway, apron available; limited lighting on request.
Tambacounda 13° 44' 13" N 13° 39' 11" W	6,554 x 98	Asphalt/Fair	161	Civil airfield; serviced by Air Senegal; C-141 capable; turnarounds, taxiway, apron; emergency runway lighting; onsite fuel storage; perimeter fence.
Thies 14° 48' 44" N 16° 56' 59" W	5,975 x 66	Asphalt/Poor	269	Military airfield; runway is closed; runway surface material eroded; taxiway and aprons available; helipad available; hangars available.
Ziguinchor 12° 33' 20" N 16° 16' 54" W	5,069 x 98	Asphalt/Good	75	Civil airfield; C-130 capable; taxiways, aprons, hangars; runway and taxiway lighting available; onsite fuel storage. Runway improvements planned.

Maritime

As the former capital of French West Africa, Senegal inherited a relatively modern maritime infrastructure from the French colonial period. Since independence in 1960, however, the maintenance has been minimal, and today much is in disrepair. Senegal has a total of seven ports consisting of three major (Dakar, Saint-Louis, and Ziguinchor) and four minor ports (Richard Toll, Kaolack, Matam, and Podor).

Dakar Port

Senegal's only major seaport is at Dakar, located at 14° 41' N 17° 25' W. It has the geographic advantage of being the westernmost port in Africa and is an important regional and international transit hub. Dakar has an improved natural harbor formed by two breakwaters. The harbor is about 1.9 kilometers- (1.2 miles-) long and 1 kilometer- (0.6 mile-) wide, enclosing about 200 hectares (500 acres). Approximately 9,150 meters (30,000 feet) of berthing space is provided. Grande Wharf has an alongside depth of 11 to 11.6 meters (36 to 38 feet). The sea bottom around Senegal is composed of mud, sand, rock and gravel. The harbor provides good natural and artificial shelter, and accommodates all classes of ships.

Offshore approaches are generally clear except for scattered wrecks offshore. Beach approaches are best described as clear and have gradients rated from flat to gentle. Numerous steamship lines make frequent stops at Dakar and most road and rail links converge upon the port. It handled approximately 7 million tons of traffic in 1998. Senegal's port authority, the Port Autonome de Dakar (PAD), plans to modernize and expand its facilities, including plans to enlarge the port itself.

Hazards in the Port of Dakar include sea grass and other vegetation that can drift seaward, as well as an unregulated fishing fleet. Haze is frequent south of Dakar between November and April, and north of Dakar

between May and August. Between June and October, thunderstorms arise suddenly from the east and raise choppy seas.

The city of Saint-Louis (15^{o} 60' N 16^{o} 31' W), located on an island near the west bank of the Senegal River, maintains a river port. Seaward of 10-meter (33-foot) depth, offshore sediments are predominately mud with patches of gravel. Shoreward of 10-meter depth the mud grades into sand. Sand becomes mixed with shell around the mouth of the River Senegal. River sediments are sand near the mouth of the river grading into mud at Saint-Louis.

Sea grasses form underwater meadows in the shoals. Mangroves grow in the estuaries. Reed swamps fringe the lakes and rivers. The northern part of Langue de Barbarie is covered with filaos trees.

The slope of the beach is gentle in the inter-tidal zone and is steep above the inter-tidal zone. Shoreward of the 5.5-meter (18-foot) depth contour, near-shore slopes are mild.

The offshore approach is clear; the near-shore approach may be partly obstructed by jetties. Approach to the river mouth is obstructed by a bar

Senegal River at Saint-Louis

fronting the river mouth. Hazards include two wrecks, which are located in the channel of the River Senegal at 20 kilometers (11 nautical miles) south of Saint-Louis. A submarine cable, marked by beacons, crosses the river channel 2 kilometers (1.1 nautical miles) south of the Faidherbe Bridge. The river channel contains numerous shifting sand flats and mud flats, which uncover at extreme low water.

The other major river port is Ziguinchor, located on the Casamance River, at 12^{o} 35' N 16^{o} 16' W. This river valley is tidally influenced and bordered by mangroves for 90 kilometers (48 nautical miles) from the mouth. Approximately 145 kilometers (78 nautical miles) upstream from the mouth, the river opens up to a broad lateral marsh occupied by well developed vegetation. At Ziguinchor, the river has a navigable width of about 500 meters (1,640 feet) between the banks on both sides with general mid-channel depths of 7 meters to 11 meters (22.9 to 36.1 feet). Hazards include wrecked boats and floating debris. Dugout canoes equipped with diesel engines and outboard motors are numerous on the river. Entanglement is possible from snags and floating islands of vegetation.

Lac Rose (pink lake), also known as Retba Lake, is located approximately 30 kilometers north of Dakar. Its name derives from its odd color which is caused by the presence of feldspar deposits that reflect sunlight through the salt water. Its color varies during the day, shifting from mauve to pink as the day becomes progressively brighter. The lake is actually a large, shallow lagoon surrounded by dunes. People are routinely in and around the lake to extract the salt from its bottom. Because of its high salinity, it produces great buoyancy.

Senegal has three major navigable waterways that are greatly influenced by seasonal rains. With the re-establishment of a ferry service between Dakar and Ziguinchor in the 1990s, the Casamance River now provides an alternative route to overland travel.

Casamance River

The Casamance River lies along the southern border of Senegal and empties into the Atlantic Ocean. The entrance of Casamance River is marked by Pointe de Nikine (12^{o} 33' N, 16^{o} 45' W) in the south and Pointe de Djogue (12^{o} 34'N, 16^{o} 45'W) in the north. The mouth of the river is about 1.9 kilometers- (1.0 nautical miles-) wide and is partially blocked by a bar. This river is sluggish and bordered by swamp for most of its 370 kilometer (200 nautical mile) length and bordered by mangroves for 90 kilometers (48 nautical miles) from its mouth. River channels change position and the river itself has variable depths. Extensive regions along the river have been converted to cultivated fields of wetland rice and peanuts. Its main source is the Diaboulou, the Kamobeul Basin, and the Soungrougrou. Fed by numerous streams, it drains a narrow basin less than 32 kilometers- (19 miles-) wide. The river is tidal and saline far inland and its bottom consists of mud or sand or a combination of both. Shell occurs within the river and in large patches along its mouth. Ziguinchor, located 63 kilometers (34 nautical miles) from the river's mouth, is an important center of commerce for Senegal. Approximately 145 kilometers (78 nautical miles) upstream from the mouth, the river opens up to a broad lateral marsh which is heavily vegetated. Along its middle courses, the mud (clay) and sand banks are steep, flat-topped, and about 6.1 meters (20 feet) high. Water temperatures are believed to range from 18° C (64° F) during winter to 28° C (82° F) during summer. People of the Casamance region rely on fishing and agriculture and depend on the river for transporting products. Fishermen use a variety of cast nets, traps, and barriers in the river.

Saloum River

The total length of the Saloum River is 112 kilometers. The Saloum River is fed by the Sine River and serves as a major transportation route for peanut producers. It is sluggish and salty and bounded by agricul-

Saloum River

tural areas and marshland. Only its lower reaches carry water all year and it is only navigable as far as Kaolack.

Senegal River

Current navigability of the Senegal River is 220 kilometers reaching Podar throughout the year and 924 kilometers reaching Kayes, Mali during the rainy season. A project is underway to extend its all-year capability to 924 kilometers. The first rains in early May are quickly absorbed by the parched soil and cause no appreciable rise in the river until after June when numerous creeks fill rapidly. Its maximum rise at Saint-Louis does not occur before the end of October. When the rains cease, the river falls slowly at Saint-Louis. Tidal influence may extend as far as 441 kilometers (238 nautical miles) above Saint-Louis when the river is at its lowest. Approximately 100 miles inland, the Taoue Canal connects the river to Lac Guire, which covers 175 to 280 square

kilometers, has a 150 kilometer shoreline, and is 1.3 meters deep, making it Senegal's largest freshwater lake. Dams on the river regulate the lake's water level. Fishermen use a variety of fishing techniques from cast nets to barriers in the Senegal River.

A ferry across the Senegal River into Mauritania is available at Rosso. It operates from 0900 to 1700. It is illegal and dangerous to cross the Senegal River by private, dugout canoe.

Communication

Senegal's constitution provides for a free press, but laws prohibit reports that are considered subversive. Nevertheless, its independent media are openly critical of the government.

Radio and Television

Senegal's only television station is government owned and broadcasts in French. A French network, Canal Horizons, operates a subscriber television service. Senegal has six radio broadcast companies, one of which is state owned. There are 10 AM and 14 FM stations, all of which broadcast in French. In 1997, approximately 1.24 million Senegalese owned radios and 361,00 owned televisions.

Telephone and Telegraph

In 1998, there were approximately 140,000 telephone lines in operation, mainly in Dakar, and 22,000 mobile phones. A major program to modernize and expand the network is now under way. Its goal is to create 50,000 mobile connections and significantly increase the number of fixed lines in the country over the next decade, with a particular emphasis on expanding telephone coverage in rural areas. Sentel, Senegal's major mobile phone company, is now competing with Sonatel and others are reportedly considering entry into the market.

The following numbers can be used for phone services.

Senegal from the United States: 011+221+number.

United States from Senegal: 00+1+area code+number

Police: 17

Fire brigade: 18

Emergency medical services: 821-3213

Calling Senegal from the United States costs about US$1.20 a minute. Calling the United States from Senegal costs between US$0.59 and US$1.22 per minute.

Fax services are available in hotels and “telecenters” located in every major city. Telegraph services are provided at main post offices and some hotels.

In 1997, the number of personal computers in Senegal approximated 100,000. There are about 8 internet access providers with 306 hosts and 403 domains. In May 1999, Senegal had approximately 7,500 internet subscribers, who were mainly urban dwellers.

Newspapers and Magazines

Senegal has five daily local newspapers, four of which are independent. All are printed in French. Political parties control a few. *Le Soleil,* Senegal's largest paper, is state-owned. Senegal's ruling party, the *Parti Democratique Senegalais*, controls the newspaper *Sopi*.

Postal Service

The primary means of communication for most Senegalese is by mail. There were 130 post offices in Senegal in 1995. Service is unreliable. Surface mail to Europe takes 2 to 6 weeks for delivery, while airmail to Europe takes 7 to 10 days.

Satellites

Senegal has one Atlantic Ocean Intelsat station.

CULTURE

Sixty-two percent of Senegal's population is rural. In rural areas, population density varies from about 77 per square kilometer (200 per square mile) in the west-central region to 2 per square kilometer (5 per square mile) in the arid eastern section. About 50,000 Europeans (mostly French) and Lebanese reside in Senegal, mainly in the cities. Senegal's population is very young; 40 percent is age 15 or younger.

In 1995, average life expectancy was 48.3 for males and 52.6 for females, for an overall average of 50.4. In 1997, the fertility rate was five births per woman.

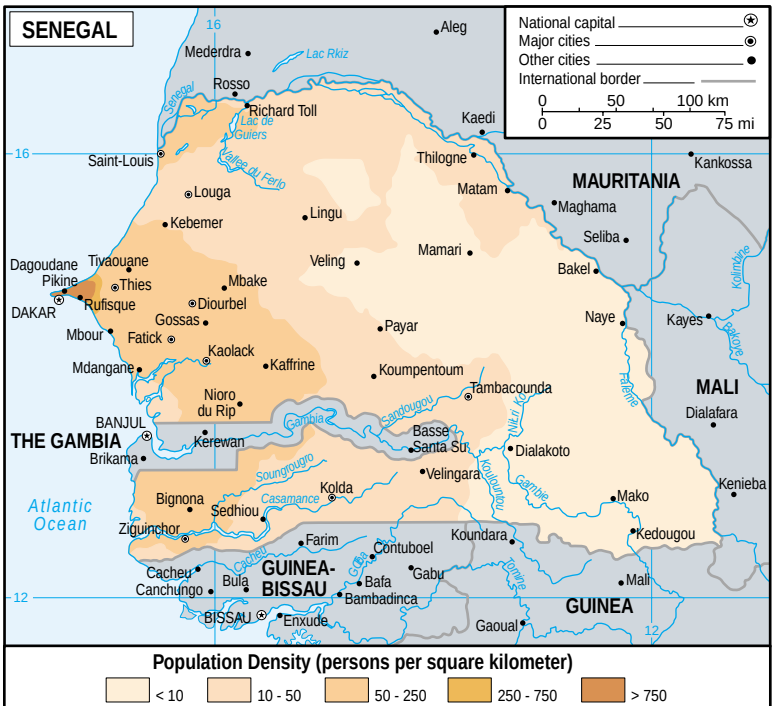
French is the official language, but is used regularly only by the literate minority. All Senegalese speak an indigenous language, of which Wolof has the highest usage.

Senegalese tend to identify with their ethnic group rather than their country; however, differences among the various ethnicities are minimal, and compared to other African states, there is tremendous tolerance among the many ethnic groups.

Society

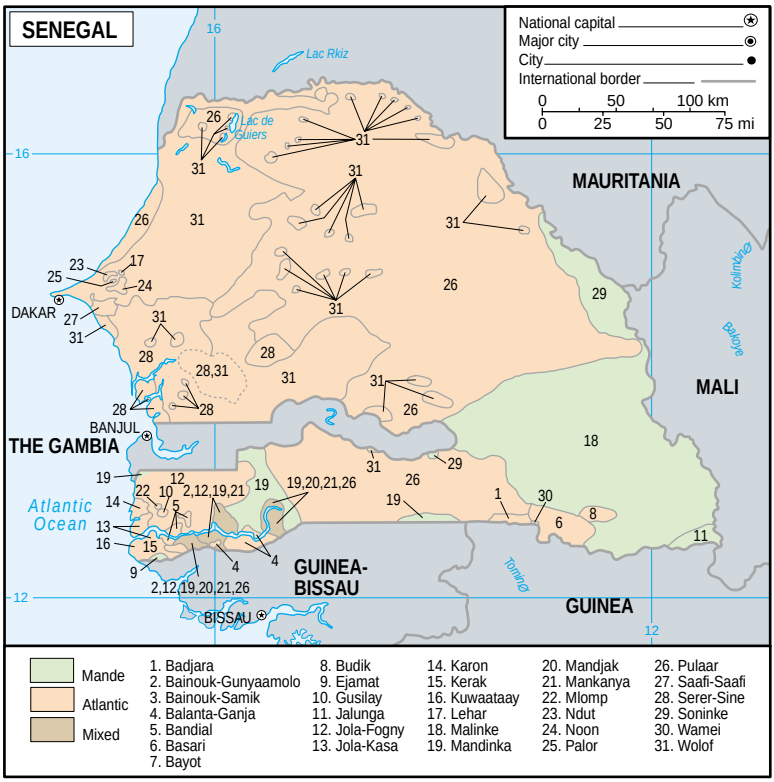
People

The Wolof comprise 36 percent of the population, forming the ethnic majority. They are concentrated mainly in the northwest portion of Senegal and dispersed elsewhere among the other tribal groups in the eastern and southeastern areas of the Saloum and Casamance River valleys. Historically they were conquerors who assimilated other ethnic groups. Adoption of linguistics and intermarriages occurred, eventually forming a heterogeneous society. As a result, modern Wolof have ancestors originating from the other tribes, which may explain their great tolerance for minority ethnicities. The Wolof are primarily Islamic.



Population

The Serer, comprising 17 percent of the populace, form the next dominant ethnic group. Situated in the Kaolack, Fatick, and Thies regions and along the coastal region of Cap Vert, they have close affiliations with the Toucouleur and the Peul. They occupied the Senegal River Valley in the 11th century, but migrated when they refused to convert to Islam. In the 15th century, they migrated again to avoid integration into the Wolof society. They primarily engage in farming and fishing, and although they have a mild aversion to modernity, they engage in the



Language Distribution

modern agricultural economy. Many migrate to the urban areas to work during the dry season. Fifteen percent is Christian, but most adhere to traditional beliefs.

The Peul, also known as the Fulani, comprise 17 percent of the populace. They are concentrated mainly in the middle valley of the Senegal River and the upper Casamance. They are Islamic and tend to live in

Wolof Village

small groups headed by a chief. They are mainly ranchers who trade heavily with the Wolof and Toucouleur for crops.

The Toucouleur comprise 9 percent of Senegal's populace. They reside in northern Senegal and have concentrations across the border into Mauritania. They were forced to migrate to urban centers during the droughts of the late 1960s and early 1970s. The Toucouleur were the earliest converts to Islam.

The Diola comprise 9 percent of the populace and are concentrated in the Casamance region and some in Guinea-Bissau. Relatively isolated until completion of the Trans-Gambian Highway in 1958, they are considered by some to be Senegal's original inhabitants. They are chiefly rice and peanut cultivators. The Diola are primarily Roman Catholic.

The Manding comprise 6 percent of Senegal's population. They reside primarily in the Casamance region, mainly in the eastern portion. They live in large settlements where they engage heavily in farming.

Education and Literacy

Thirty-five percent of Senegal's adult population is literate. Literacy rates for women reach only 24 percent, compared with 44 percent for men. Primary education usually begins at age 7 and lasts 6 years. Although school enrollment is mandatory, non-compliance is high. In 1997, 71 percent of eligible students were enrolled. Secondary education commences at age 13 and lasts 7 years. In 1997, only 16 percent of all eligible students were enrolled. Women in Senegalese society have traditionally had fewer educational and professional service opportunities than men. Despite an increased focus on women in development over the last decade, enrollment rates for young girls in Senegal's primary school system still lags behind those for boys.

National service options in Senegal include the police, customs, state nursing corps, primary and secondary school teachers and the general civil service. All of these options are open to young men and women and require at least a secondary school diploma. Many specialty schools require some post-secondary school education and a competitive entrance exam. Training at Senegal's national school for applied economics, for example, requires a high school education only, while the national school for administrators and magistrates requires a university degree. Admission to the latter is highly competitive, as successful completion guarantees employment in the upper levels of government service. In the past, successful completion of studies at any of the specialty schools resulted in automatic recruitment into the appropriate national service. However, budget constraints have reduced the number of available positions and these are now often assigned on a competitive basis. While young women have equal access to these facilities, fewer women than men make it through the primary and secondary educational system and qualify for this advanced training. Training for those admitted to Senegal's two universities and specialty training schools, such as those noted above, is provided at state expense.

Religion

Although 90 percent of the population is Islamic, Senegal's government is secular and provides for religious freedom in its constitution. Christianity comprises 6 percent of the populace; the remaining 4 percent adheres to traditional tribal beliefs based on animism. Senegal is very tolerant of religious differences, and both Islamic and Christian holidays are celebrated. Mixed marriages are common. President Wade, who is Muslim, has a Catholic wife. Beliefs are neither ethnically nor regionally specific, but patterns do exist. Christianity is most heavily represented in the Casamance region while those professing traditional beliefs are primarily members of the Bassari in the east and Diola in the south. Even those professing Islam or Christianity have incorporated some of their traditional beliefs into their more modern ones.

Touba Mosque

Traditional beliefs vary from group to group, but in general all recognize a supreme being associated with the sky that can manipulate both man and nature. Man can call upon his deceased ancestors or pray to this supreme being to influence a favorable outcome. Praying mainly occurs during planting or harvesting season before a small altar which may or may not have an image. Traditional beliefs are primarily localized in small villages, mainly among the smaller ethnic groups. Among the larger groups, only the Diola and Serer have significant denominations. Urban migration has contributed to its dwindling adherents and it is professed primarily among the older generation.

Although Arab traders introduced Islam to the Toucouleur rulers in the 11th century, it was not until the 19th century that Islamic conversion began to spread to the masses, the Serer were not converted until the 20th century. The fact that its wide acceptance did not occur until Senegal's colonial period is significant. Islam's black missionaries were more easily accepted than their white Christian counterparts and its demands on social convergence were less traumatic. Senegalese Islamic faith is based on the Sunni branch and although there are varying degrees of religious practice, in general Senegalese are not strict adherents to the five pillars of Islamic faith. For example, Senegalese Islamists tend to pray three times per day compared to the five times mandated by the pillars. However, adherence to the faith is strict during Ramadan. In Senegal, Islam is divided into seven brotherhoods which partly follow ethnic patterns, but which vary little in religious practices. These brotherhoods are led by marabouts, who essentially replaced the tribal leaders in the 19th century by utilizing economic means to acquire their power. By the 1970s, the brotherhoods were involved in various enterprises including agriculture and transportation that enabled them to become an influential political force. Of the seven, the most dominant are the Tidjaniya (57 percent), Muridiya (26 percent), and the Qudiriya (16 percent).

Tidjaniya is the more tolerant and individualistic brotherhood. Its practices do not involve elaborate rituals or mystic learning, but it demands loyalty and emphasizes group prayer. Its membership encompasses Wolof farmers, city-dwellers, and the well educated. The Muridiya are more disciplined and rigid in their practices. Although its membership is primarily Wolof, it took root in those who did not originally convert to Islam, mainly former slaves and poor farmers. Unlike other brotherships, this one is unique to Senegal in that it provides an economic system and relates work to religious worship. Followers work in communal villages in exchange for prayers by its marabout who receives all the proceeds from his followers' labor. Founded in the 12th century in Mesopotamia, the Qadiriya was the first Islamic brotherhood. Its African branch took root in the 15th century and originally its influence was confined to the Senegal River valley,

namely the Peul, Toucouleur, and Sarakole. It emphasizes Islamic learning and its rituals tend to be quiet with little chanting.

Senegal's first Christian mission was built in Dakar in 1845; its second, in Joal in 1849. Several missions were established later in the 19th century among the Serer on Petite Côte and the Diola in lower Casamance. Conversion success can be attributed to the establishment of mission schools, social centers, libraries, and cultural activities. The majority of the Christians in Senegal are Roman Catholic; there are approximately 1,000 Protestants (mainly among the Tambacounda, Zinguinchor, and concentrated in Dakar). Roman Catholics are usually well educated and are represented within the political class. Religious tolerance for the minority Christians is attributed to the openness of the education system afforded to all Senegalese regardless of faith.

Recreation

Senegalese often engage in dances, especially during the harvesting season. Popular sports include canoe racing and wrestling. Urbanites engage in many Western forms of recreation including attending the cinema and discotheques.

Social Customs and Courtesies

Senegalese customs have a blend of French culture with Islamic tradition. In general, Senegalese are very friendly and cordial, but divisions in social standards exist. The divisions are based more on geography than ethnicity. Urban dwellers tend to be less rigid in their customs than rural ones. Rural society is more traditional, whereas urban society is more Westernized. As a result of Dakar's key role in colonial times, it is one of the most Westernized cities in Africa and heavily influenced by French culture.

Greetings

Greetings in Senegal entail lengthy exchanges with inquiries about each other's health and family's welfare. Eye contact is not made with people

Senegalese Dancers

of a higher status or an elder, nor females with males. Urban Senegalese who know each other well will shake hands and may use the French custom of kissing alternate cheeks three times. In rural areas, only hand shaking is used, but only between males; females will curtsy. Departures follow a similar routine to that of greetings.

Gestures

Like many Islamic cultures, the right hand is considered the "clean" hand, and, therefore, is used when shaking hands or exchanging objects. Public signs of affection, such as holding hands, are considered rude. When approached by street vendors, Senegalese avoid eye contact and motion with their hands to back off if they do not wish to be solicited. To draw the attention of another individual, a Senegalese may snap his fingers or hiss.

Dress Standards

Senegalese Dress

In Dakar, it is not unusual to see Senegalese men wearing business suits or women wearing Western dresses at work. Outside of the business environment, more traditional clothing, consisting of a boubou (loose cotton robe) with bouffant pants for men and a sarong under a long robe for women is worn. Women also wear a colorful head wrap. Muslim women do not wear a veil; however, women who journeyed to Mecca will wear a white headdress while males who have done so will wear a white scarf. These people are highly respected. Men will always wear a shirt in public, while women are forbidden from wearing pants and shorts. Shorts are only worn for athletics while beach attire is only worn at the beach. Revealing clothing is inappropriate.

Taboos

Senegalese have retained beliefs concerning supernatural entities such as ghosts and witches. Witchcraft is widely feared and Senegalese often wear amulets to ward off witches, which are believed to inhabit humans and possess the ability to change into animal forms. Witches are believed to be cannibalistic and prey upon the young and weak. Often a sick Senegalese will not openly admit his illness or wish to be visited at night for fear of being attacked. In Senegal, it is considered bad luck to make inquiries regarding children and especially to ask pregnant women questions concerning her unborn child.

Country Specific

In traditional Senegalese homes, males and females dine separately. Eating involves an exercise in sharing. The diners sit on the floor and a large communal bowl is placed on floor rugs. All the attendants eat from the bowl either by using their hands or utensils. Eye contact is avoided during eating. Some urban Senegalese engage in more Westernized dining which takes place at a table and which has individual dinnerware.

MEDICAL ASSESSMENT

Disease Risks to Deployed Personnel

Food- and Waterborne Diseases

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

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

Vector-borne Diseases

The climate and ecological habitat support large populations of mosquitoes, as well as variable numbers of other vectors such as ticks. Many of

the vector-borne diseases are even more common than officially reported because medical surveillance and diagnostic capability are lacking countrywide.

Dengue fever and malaria are the major vector-borne disease risks in Senegal, capable of debilitating a high percentage of personnel for up to a week or more. Dengue fever and malaria occur countrywide, including urban areas, and are transmitted year-round. In addition, there are a variety of other vector-borne diseases, including Crimean-Congo hemorrhagic fever and yellow fever, which as a group constitute a very serious risk comparable to that of dengue fever and malaria. Personnel exposed to mosquitoes, ticks, sand flies, or other biting vectors are at high risk during the day or night, in both urban and rural areas.

Sexually Transmitted Diseases

Gonorrhea, chlamydia, and other infections are very common, and may affect a high percentage of personnel who have sexual contact with prostitutes. In addition, the sub-Saharan Africa region has the most widespread HIV/AIDS epidemic in the world, affecting all segments of the population. Heterosexual contact is the predominant mode of HIV transmission. Carrier rates for hepatitis B are also high. Though the immediate impact of HIV/AIDS and hepatitis B on an operation is limited, the long-term health impact on individuals is substantial.

Respiratory Diseases

Senegal lies within the "meningitis belt," where dry conditions from November through May, combined with crowding of local populations, result in large annual outbreaks of meningococcal meningitis. Meningococcal meningitis occurs year-round and countrywide, and a small number of cases could occur among U.S. personnel, particularly in crowded living conditions. Tuberculosis rates are high among the local population, and PPD conversion rates among U.S. personnel may be elevated over the U.S. military baseline.

Water Contact Diseases

Lakes, rivers, streams, or other surface water may be contaminated with the infectious agents that cause leptospirosis and schistosomiasis. Operations or activities that involve extensive water contact may result in personnel being temporarily debilitated with leptospirosis and schistosomiasis in some locations.

Animal Contact Diseases

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

Medical Capabilities

The quality of Senegal's health care is poor, and medical care is not readily available in rural areas. The country's few national-level facilities and research institutes, located in Dakar, are well equipped and supplied. Senegal has one of the most efficient blood services in Africa, with HIV testing equipment supplied from a European country. Major hospitals or clinics can treat basic medical emergencies, including simple fractures. Although medical personal in urban areas are likely to know some English, translation services may be necessary.

Senegal imports most of its pharmaceuticals and medical supplies, which are of acceptable quality. The quality of domestically manufactured pharmaceuticals is fair, but difficulty may be encountered in translating names and directions from packaging.

Key Medical Facilities

Principal Hospital

Coordinates	14-39-39N 017-26-06W
Location	1 Nelson Mandela Avenue, B.P. 3006
City	Dakar
Telephone	(221) 839-50-50

Type	Military/Government
Beds	450
Capabilities	Medical — general, internal, gastroenterology, infectious disease, pediatrics, radiology, cardiology, psychology, pulmonology; surgical — general, maxillofacial/plastic, cardiothoracic, orthopedics, neurosurgery, obstetrics/gynecology, ophthalmology, urology, ear/nose/throat (ENT); ancillary — intensive care unit (ICU), neonatal ICU, 8 operating rooms, blood bank, laboratory, pharmacy, burn unit, 3 computed tomography (CT) scanners.
Comments	Region's best facility for emergency care. Clean and well maintained. U.S. Embassy recommends for use.

Dantec Hospital

Coordinates	14-39-28N 017-26-10W
Location	Avenue Pasteur
City	Dakar
Telephone	822-24-20
Type	Civilian
Beds	1,000
Capabilities	Medical — general, cardiology; surgical — general, cardiothoracic; ancillary — laboratory, pharmacy.
Comments	U.S. Embassy recommends for use, secondary to Principal Hospital.

HISTORY

French Colonialism

Originally founded by Portuguese explorers in the 1400s, Senegal and its possessions transferred between France and Great Britain from 1638 and 1815. Only after the Congress of Vienna in 1815 were the Senegalese colonies placed firmly under French control.

By the 1850s the Senegalese were inculcated in French language, culture, and history. An educated, privileged class of Senegalese resulted. Beginning in 1872, France granted the existence of self-governing communes within its colonies. However, until after WWII, only four municipalities were self-governing — all were Senegalese. Members of these communes had voting rights normally reserved for French citizens. Non-commune Senegalese were treated as colonial subjects; thus, cultural divisions began to form between French Senegalese and Senegalese "colonists." After the Federation of French West Africa was created in 1895, Dakar became the Federation's capital and France relied heavily upon indigenous tribal leaders to fulfill local administrative positions. In 1900, France initiated a policy of developing self-sufficient colonies. In contrast to many interior territories, Senegal had a thriving trade industry; thus, it had little trouble in transitioning to this new economy.

After WWII, French citizenship was granted to all Senegalese as a reward for their loyalty. In 1946, the French Union was established and Senegal was designated an overseas territory. Its territorial status brought with it direct representation within the French Parliament-something other French territories did not enjoy until 1956. But, the Senegalese were restless with incremental assimilation and dissatisfied with their second-class status within a larger France. Further, many intellectuals questioned the philosophical belief that French culture was superior and African culture was non-existent prior to French influence.

Independence

During the post-war period, Senegal's Leopold Senghor rose to prominence as he argued for increased autonomy. In 1948, Senghor formed the Bloc Democratique Senegalaise (BDS) which was supported mainly by Senegalese peasants. Initially the BDS only advocated cultural autonomy within a French federation. That changed in 1958, when France attempted to form a community of its holdings, which granted members the right to form individual governments, but integrated their foreign and domestic policies. Membership in this community was voluntary, but failure to join

resulted in a severance of all ties with France. Because all aspects of Senegal's society were intertwined with France and its African colonies, Senghor believed a sudden separation would be detrimental. Instead, he proposed the formation of the Mali Federation, which would maintain its economic and foreign affairs links to France, but provide it with social and political autonomy. Originally conceived to include three other territories, only French Sudan joined with Senegal in April 1959. The Mali Federation's relations with France were strained and on 19 June 1960 it was granted independence. Disagreements over government structure led to the Mali Federation's dissolution on 27 August 1960.

Senegal's First President — Leopold Senghor

The first Senegalese elections were held in September 1960, when Leopold Senghor was elected president and Mamadou Dia became his prime minister. Dia's socialist ideas contrasted sharply with Senghor's. On 17 December 1962 Dia attempted a coup d'etat. With strong support from the military, Senghor was able to arrest Dia and his supporters. On 3 March 1963, a constitution providing for a strong central government without a prime minister was adopted. Dia supporters rioted in Dakar. A period of political upheaval followed during which opposition parties were either banned or absorbed. By June 1966, Senghor's party, the Senegalese Progressive Union (UPS formerly the BDS), became the only official party.

Demands for social reform and improved economic conditions dominated Senegalese politics during Senghor's presidency. Senghor's socialist policies emphasized agricultural development, but were not radical. In contrast to other African states, Senegal did not attempt to repossess foreign owned businesses. Instead, Senegal's competitive edge was enhanced through direct government assistance to Senegalese farmers to reduce their costs. However, its economy remained stifled. Lacking the protectionist policies it economically benefited from under French rule, Senegal was unable to compete in the world market. Further, severe droughts in 1966, 1968, 1970, and 1972 devastated its agricultural output.

Student protesters demanded a reduction in French influence on the curriculum. Workers demanded improved wages and working conditions. Security forces were deployed to subdue the protests often leading to riots. However, in the early 1970s, Senghor alleviated tensions through limited compromise.

In 1970, the prime minister position was restored and filled by Abdou Diouf. Appointment of the younger Diouf was meant to placate the student youth. In 1978, more political parties were allowed to form, but the UPS remained dominant in elections. Continued economic deterioration, social discontent, and calls for political reform eventually caused Senghor to relinquish the Presidency to his Prime Minister in December 1980. Though students and trade unionists challenged the constitutionality of the transition, Diouf assumed the Presidency in January 1981.

Diouf's Presidency

Under Diouf, incremental reforms were implemented and Senegal began to participate in foreign affairs. Reforms to the labor code occurred and there was increased academic independence. But his presidency was marred with persistent questions of legitimacy and poor economic conditions.

Throughout Diouf's presidency, calls for election reform continued. Though Diouf lifted restrictions on political activity in Senegal, the Socialist Party (PS) formerly the UPS

Former President Abdou Diouf (Courtesy BBC)

remained the dominant party. Opposition parties were allowed to form, but were unable to unite against the PS. Boycotts and student protests preceded elections and were followed with riots and accusations of fraud.

The rioting that followed the February 1988 elections resulted in a state of emergency being declared. Abdoulaye Wade, leader of the Parti Democratique Senegalais (PDS) opposition party, and some of his followers were arrested for inciting the violence. Wade received a 1 year suspended sentence and his followers were later given presidential amnesty.

On October 1989, the National Assembly granted the opposition access to the state media and proportional representation in the administrative departments. But the PDS opposition party boycotted the legislative sessions. In March 1991, the prime minister position was restored and Wade was appointed to the position of Minister of State. Reforms to the presidential selection process were adopted in September 1991. Despite the progress, Wade and some PS members from the council of ministers resigned their positions in October 1992. Though Wade's appointment gave him and the PDS a higher profile and improved their polling results during the 1993 elections, the PS maintained its supremacy.

Immediately following the 1993 elections, Wade and other PDS members were arrested for suspected involvement in the assassination of the President of the Constitutional Council. The event sparked violent protests in Dakar, which were further inflamed when the government proposed reducing public salaries in July 1993. When the measures were imposed in October, unions held a general strike. A series of arrests of various opposition leaders furthered the civil unrest. To reduce tensions, Wade was again appointed Minister of State in February 1995. Regional elections were again disputed in November 1996, when the PS won control of all 10 regions despite the opposition's united front. Calls for election reform increased. The government amended the electoral law and

formed Observatoire National des Elections (ONEL), an independent electoral commission.

End of an Era

Wade's appointment caused divisions within the PS. In 1997, Minister of Interior Djito Ka formed the Movement for the Renewal of Democracy (MRD), which consisted of former PS members. Although it pledged its support to Diouf, it publicly accused the PS of electoral fraud. In May 1998, legislative elections were held. Though the PS maintained its hold on all of its seats, ONEL was credited with the elections being the fairest to date.

Election boycotts of the newly created Senate resulted in the PS controlling 58 of 60 seats. Criticism of the PS increased as one of its founding members, Moustapha Niasse, publicly accused it of corruption and formed the opposition party Alliance des forces de Progres in June 1999.

As the 2000 elections approached, Diouf's dwindling support, continued economic decline, and fracturing of the PS emboldened the opposition parties to form a united front. The campaigns were unusually peaceful with exception to the Casamance region. Diouf, Wade, Niasse, Djibo Ka, Madaamba Sock, and three other candidates vied for the presidency. The February 2000 election resulted in none of the candidates obtaining a clear majority, but resulted in the highest turn-out and most transparent elections yet. Diouf received 41 percent to Wade's 31 percent. The second round commenced on 19 March 2000, with Wade endorsed by all the opposition candidates except Ka, who supported Diouf. Wade succeeded in defeating Diouf 58.5 percent to 41.5 percent, but the key to victory was the shift of Diouf's long-time support from the conservative Islamic Mouride Brotherhood to Wade. Diouf conceded defeat and a peaceful transition followed, with Wade taking office in April 2000, but the PS maintained control of the Legislature. Immediately following Wade's election, constitutional reforms were implemented. However, Senegal's economic situation remains stagnant.

Chronology

1444-45	Senegal River explored by Portuguese traders
1638	French established outposts
1659	Saint-Louis founded
1848	Saint-Louis and Goree elected deputy to Paris' National Assembly
1871	Dakar and Rufisque elected deputy to Paris' National Assembly
1895	Senegal officially proclaimed French colony with Saint-Louis as capital
1946	Senegal joined French Union
1948	Senegalese Democratic bloc founded by President Senghor
1956	Senegal granted autonomy under French Community
1959	Senegal and Sudanese Republic joined to form Mali Federation
1960	Mali Federation granted independence from France in June. Senegal seceded from Federation Aug 20
1963	New constitution expanding Presidential powers adopted
1966	One-party system adopted; Senegalese Progressive Union (UPS)
1968-73	Sahel region experienced major drought
1978	Three party political system established.
1981	Abdou Diouf became President
1982	Senegambian Federation established. MFDC rebels began attacks
1989	Senegambian Federation dissolved
1990	Independent disputes with Guinea-Bissau and Mauritania over demarcations results in skirmishes along border
1991	Treaty with Guinea-Bissau signed. Treaty with Gambia signed
1992	Diplomatic links with Mauritania restored
1998	Senegal deployed troops to Guinea-Bissau in support of President Vieira
2000	Abdoulaye Wade elected president.
2001	New Constitution approved in popular referendum.

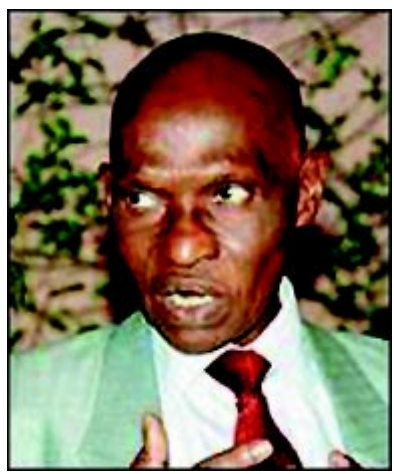
GOVERNMENT AND POLITICS

Government

Senegal is a republic with a strong presidency, weak legislature, reasonably independent judiciary, and multiple political parties.

National Level

Executive Branch



President Wade (Courtesy BBC)

The president is elected by universal suffrage. The new constitution, approved on 22 January 2001, reduced the length of the president's term from 7 to 5 years. Previously, presidential terms were unlimited; the constitution now restricts them to two. The president appoints the prime minister who then appoints the Council of Ministers. Legislation requires the president's approval before implementation. The president also serves as Commander of the Armed Forces and is responsible for national defense and foreign policy. In addition to appointing the members of the 3 high courts, the president can appoint 12 members to the Senate. In addition, he appoints the governor of each of Senegal's regions. The president also can assume emergency powers, including the right to rule by decree if state security is deemed to be under threat and the power to dissolve the National Assembly. Impeachment of the president on the grounds of high treason occurs by secret ballot conducted by the National Assembly.

Abdoulaye Wade was elected following the second round of voting on 19 March 2000. He took office on April 2000. Elected at the age of 73, it is ironic that President Wade's platform offered the formation of a “New Senegal”. A devout Muslim, he calls himself a liberal pan-Africanist and allies himself with leftwing parties. Wade studied and taught law in France and was a Dean of Economics and Law at the University of Dakar. Wade's new government includes members of the other parties. During his campaign, Wade promised to end the Casamance violence, continue government election reform, address the economic crises, and address youth unemployment. Wade's first major proposal was that of constitutional reform which included reducing the president's term from 7 to 5 years, limiting the president to two terms, and abolishing the Senate. The reforms were approved by 90 percent of the voters in a referendum held on 7 January 2001. The Union pour le Renouveau Democratique (URD), but not the Parti de l'independance et du Travail (PIT) supported its tenets. Women are underrepresented in all government sectors; however, during the election campaign, Wade promised to improve this situation.

Legislative Branch

Prior to the 2001 constitution, Senegal's legislature consisted of a National Assembly and a Senate. The constitution abolished the Senate and reduced the number of seats in the National Assembly from 140 to 120. Deputies of the National Assembly are elected by universal suffrage and serve 5-year terms. President Wade's party, the Senegalese Democratic Party, won 89 of the 120 seats in the National Assembly during the legislative elections that took place on 29 April 2002.

Judicial Branch

In 1991, then President Abdou Diouf announced reforms of the judicial system, dissolving the Supreme Court and dividing its functions between five judicial bodies along the lines of the French judiciary model. The Constitutional Court deliberates on disagreements between the Executive and Legislative branches. The Council of State deliberates on accusations

against the Executive branch and supervises public accounts. The Court of Final Appeals is the highest court and regulates the subordinate courts. The Court of Accounts is responsible for disputes over public accounting and financial laws. The fifth judicial body consists of lower courts and tribunals, which operate on a regional basis. In addition, an electoral monitoring body, the ONEL, was created in August 1997 to observe all phases of the electoral process, from voter registration through to the announcement of results. Since its inception, elections have increased in their fairness. The President appoints its judges.

Key Government Officials

President	Abdoulaye Wade
Prime Minister	Madior Boye
Minister of Armed Forces	Youba Sambou
Minister of Foreign Affairs, the African Union, and Senegalese Abroad	Cheikh Tidiane Gadio
Ambassador to the U.S.	Mamadou Mansour Seck
Permanent Representative to the UN, New York	Ibra Dequene Ka

Local Level

Senegal is divided into 10 regions; each having a governor appointed by the Head of State and an elected assembly. The 10 administrative regions are: Dakar, Saint-Louis, Diourbel, Thies, Tambacounda, Louga, Kaolack, Fatick, Kolda, and Ziguinchor. Each region is divided into 30 departments under an appointed prefect; they are further divided into 138 arrondissements.

Politics

Elections

Legislative elections held on 29 April 2002 resulted in the PDS winning 89 seats. The AFP holds 11 seats, PS holds 10, the Alliance Jef Jel-URD holds 3, and the AJ-PADS holds 2. President Wade took office in April 2000. The PS maintains control of the Legislature. Under the current

Administrative Regions

constitution, the next legislative elections are scheduled for April 2007 and next presidential election in 2005.

Suffrage

The president and National Assembly are elected by universal adult (18 years and older) suffrage to a 5-year term. The constitution prohibits military personnel from voting.

Parties and Pressure Groups

Senegal's constitution, which previously restricted the number of political parties, currently allows an unlimited number. Over the last decade,

Administrative Departments

many shifts have occurred as parties have merged and split in order to strengthen their positions. Because competition is great, parties must achieve measurable cohesion to become successful.

Senegal's Socialist Party (PS) was founded in 1949 by Leopold Senghor. The PS held both the presidency and National Assembly from independence in 1960 until April 2000, when it lost the presidency. It advocates a moderate form of socialism based on traditional African concepts but has sought to encourage private enterprise, including foreign investment. Although former President Abdou Diouf remains influential, its most prominent figure is Ousmane Tanor Dieng.

The Parti Democratique Senegalais (PDS), led by Abdoulaye Wade, Senegal's current president, was the main opposition party for most of Senegal's post-independence history. Part of the reason for the PS's long-term success was the inability of the opposition parties to form a united block. After five attempts, Wade ascended to the presidency by allying himself with several smaller parties to form a unified block. Wade's agenda for the PDS includes gradual liberalization of the economy, participation in international and regional organization, and close relations with the United States.

The Alliances de Forces des Progres (AFP) was formed in June 1999 when it split from the PS. Its leader, Moustapha Niasse, is a strong socialist supported by members of the business community. Niasse had been a leading political figure for many years, serving as a cabinet director under President Senghor and a political secretary of the PS, as well as two terms as foreign minister (1978-84 and 1993-98). After failing to win the first round of the 2000 Presidential election (winning 16.76 percent of the vote), he supported Adoulaye Wade in the second round. He was immediately appointed to the position of Prime Minister by Wade, but was replaced in April 2001.

The Union pour le Renouveau Democratique (URD) was formed in 1998, when it, too, split from the PS. Its leader, Djibo Ka was one of the most powerful politicians within the PS until 1996, when he lost control to Ousmane Tanor Dieng. During the 2000 Presidential election, he secured only 7.1 percent of the vote in the first round. In the second round he endorsed Abdou Diouf, a move which caused an immediate split within the URD resulting in the emergence of the Union pour le Renouveau Democratique-Front pour L'alternance (URD-FAL), which supported Wade.

The left-wing And-Jef/Parti Africain pour la Democratie et le Socialisme (AJ/PADS) is led by Landing Savane. In the 1998 legislative elections, the AJ/PADS made its best showing. However, its representation was cut in half following the 2002 elections. It cooperates well with the

PDS and supported Wade's presidential bid. Savane was appointed by Wade to be the Minister of Industry, Crafts and Mines.

The Parti de l'independance et du Travail (PIT) is led by Amath Dansokho, who was appointed as Wade's Minister of Housing and Urbanism, but later dismissed. Unlike the AJ-PADS, the PIT is more critical of the PDS especially on its handling of the economy. The PIT was one of the few parties to reject the January 2001 constitutional referendum on the grounds that it actually increased the Presidential powers.

Senegal's other main political parties are: Ligue Democratique-Mouvement pour le Parti du Travail (LD-MPT), led by Abdoulaye Bathily; Parti Democratique du Senegal-Renovation (PDS- R), led by Serigne Diop; Convention des Democrates et Patriotes-Garab-gi (CDP-Garab-gi), led by Iba Der Thiam; Parti Liberal Senegalais (PLS), led by Ousmane Ngom; Mouvement pour le socialisme et l'unite (MSU), led by Bamba Ndiaye; Mouvement pour le Socialisme et L'unite (MSU), led by Mamadou Dia; Rassemblement National Democratique (RND), led by Madior Diouf; Parti de la Renaissance et de la Citoyennete (PRC), led by Samba Dioulde Thiam and Rassemblement Democratique Populaire (RDP), led by Ibrahima Diop.

The marabouts of the Islamic brotherhoods have a significant influence upon the government and the various political parties. Their interests are in rural and trade issues and they represent a majority of the agricultural community.

The largest trade union federation is the Confederation Nationale des Travailleurs du Senegal (CNTS) led by Madia Diop. With about 120,000 members, trade union membership is widespread in the urban sector, but the movement is weakened by corruption among its officials. The CNTS is very effective in organizing strikes and negotiating demands. One of its former leaders, Mademba Sock, ran in the 2000 Presidential election and received less than 1 percent of the vote; he now leads the Union Nationale des Syndicats Autonomes du Senegal (UNSAS). CNTS is affiliated with the PS.

Foreign Relations

United States

The United States maintains friendly relations with Senegal and provides considerable economic and technical assistance. Senegal has often supported the U.S. in the United Nations, including troop contributions for peacekeeping activities. Senegal hosted the Second African-African American Summit in 1995. Senegal was one of the first countries to join the African Crisis Response Initiative (ACRI), a U.S. sponsored program to train African armies in peacekeeping. A Senegalese battalion received initial training from July through September 1997.

U.S. exports to Senegal were US$81 million in 2000 (an increase of 20 percent), while Senegal's exports to the U.S. fell from US$8 million to US$4.2 million. The U.S. Agency for International Development (USAID) provides project assistance in the fields of health and family planning, agriculture and natural resources (including forestry), market liberalization, democratic governance, and conflict resolution. In 2001, USAID provided US$24.7-million in development assistance to Senegal. In late 1999, USAID launched a US$10 million conflict resolution program for the Casamance to support the pursuit of a sustainable peace in that troubled region. The Peace Corps program in Senegal, in operation since 1963, involves 136 volunteers (2002 estimate), engaged in forestry, health, and small business development. The cultural exchange program consists of three Fulbright professors and about 20-30 international visitor grants per year.

France

Senegal maintains strong cultural and economic ties with France. France is Senegal's single biggest export customer and remains the main source of imports for Senegal (French imports account for approximately one-third of all purchases from abroad). Senegal has long supported functional integration among French-speaking West African states through the West African Economic and Monetary Union. France

also provides military assistance to Senegal in the form of training and equipment and maintains a small force of approximately 1,240 personnel for that purpose inside Senegal.

Chad

Tense relations with Chad persisted over the Senegal's refusal to expel the former Chadian President Hissein Habre, who was indicted for crimes against humanity upon accusations of torture. Relations have improved following Wade demanding in April 2001 that Habre immediately depart Senegal.

Neighbors

Senegalese relations with its neighbors are generally good, but not without dispute. Relations with its southern neighbors tend to be erratic from spillover of the Casamance issue while relations with Mauritania are often afflicted by an ongoing territorial dispute.

Mali

Mali is an important trading partner and relations with it are very stable. The two countries are cooperating to construct The Manantali dam in Mali. A Senegalese company will administer it. It is scheduled to provide a total of 200 megawatts of generating capacity; 33 percent of which will be used to supply Senegal.

The Gambia

Generally, Senegal's relations with The Gambia are good, but often strained by the ongoing Casamance issue. In 1981, Senegal dispatched 2,000 troops to The Gambia to restore its president following a coup d'etat. As a result, the confederation of Senegambia was formed in February 1982 with Diouf as its President. All aspects of the military, economy, and foreign policy were coordinated. Senegambia was formerly dissolved in September 1989 at the request of The Gambia, which feared total integration.

The dissolution of the Senegambian Federation marked the lowest point of relations between the two countries. The Gambia often accuses Senegal of imposing unfair travel and customs restrictions, while Senegal accuses The Gambia of authorizing Movement of Democratic Forces in the Casamance (MFDC) attacks from its territory. Relations improved in January 1991, with the signing of a mutual treaty of friendship and cooperation, but Senegal maintained border restrictions, in an effort to halt smuggling. In July 1994, Gambian President Jawara was overthrown in a coup. Senegal granted Jawara asylum, though it did not officially condemn the coup. Under Gambia's new president, Yahya Jammeh, a series of trade and security agreements were signed. Nevertheless, Jammeh's affiliation with the Diolla tribe drives suspicions of Gambian support to the MFDC.

The influx of Senegalese refugees fleeing the Casamance fighting prompted President Jammeh to assist in mediations between the Senegalese government and the MFDC in 1998. Following President Wade's election, however, relations with The Gambia again deteriorated. Senegalese officials renewed accusations of Gambian authorities assisting the MFDC and openly accused it of acquiring arms from Libya with the intent of attacking Senegal. In response, The Gambia temporarily halted its mediation role in the Casamance conflict.

Guinea-Bissau

Although economic relations between the two countries have improved steadily over the years, Senegal's security interests routinely frustrate their relations. During Portuguese Guinea's struggle for independence in the 1960s, Senegal provided political support to the African Party for the Independence of Guinea and Cape Verde (PAIGC). PAIGC used Senegalese territory as a safe-haven from which to launch attacks upon the Portuguese without Senegalese consent.

After Guinea-Bissau achieved its independence, territorial disputes with Senegal occurred. In July 1989, disagreements over territorial waters were referred to the International Court of Justice, which

ruled in favor of Senegal in November 1991. Both parties signed a maritime treaty reflecting this verdict in February 1993. In October 1993, they signed a 20-year mutual pact designed to manage petroleum and fishing industry resources in their respective maritime zones. This treaty was revised in December 1995 to equally share fishing resources, split petroleum reserves, and establish a joint agency in Dakar dedicated to resource management. The agreement was again revised in August 2000 increasing Guinea-Bissau's petroleum share from 15 to 20 percent.

Differences over security issues have been less cordial. Since the MFDC's inception in 1982, Senegal has openly accused its neighbors of providing support to the rebels. With respect to Guinea-Bissau; however, Senegalese troops routinely conduct counterinsurgency operations inside its border, causing civilian casualties. Typically, Senegal apologizes for these incidents and after an exchange of accusations mutual security pacts are signed.

In May 1990, the two agreed not to harbor organizations that would threaten the other's security and to maintain border troops at a reasonable distance. In December 1992, Senegal apologized for an incident that resulted in Guinea-Bissau nationals being killed. In 1993, Guinea-Bissau assisted in forming a ceasefire agreement between Senegal and the MFDC. In March 1995 President Diouf apologized to Guinea-Bissau following a Senegalese attack on a Guinea-Bissau village.

Guinea-Bissau's military has been ineffective in eradicating MFDC bases situated within its territory because of this transgressions and suspicions of collaboration persist. Suspicions were reinforced when, in January 1998, Guinea-Bissau authorities arrested 12 members of its armed forces and 3 Senegalese private citizens trafficking arms to the MFDC. In June 1998, Senegal deployed troops to Guinea-Bissau at the request of its President following an attempted coup. During their operations, Senegalese troops were accused of

human rights violations and of denying non-governmental organizations the opportunity to provide humanitarian assistance. Troops were withdrawn by March 1999.

In May 1999, President Vieira of Guinea-Bissau was overthrown and replaced by a military junta led by Malam Bacai Sanha. This dramatic change in leadership, however, did not disrupt its relations with Senegal. President Diouf officially recognized the new government in June. In April 2000, the two governments agreed to close their mutual border following more skirmishes between Senegal and the MFDC. Relations with the newly elected Abdoulaye Wade got off to a rocky start after he publicly accused Guinea-Bissau of plotting to invade Senegal. Relations were again strained because residents of Senegal's Kolda district demanded reimbursement for cattle stolen by MFDC rebels operating from Guinea-Bissau. The incident resulted in the district's border with Guinea-Bissau being temporarily closed. In August 2000 the neighboring countries agreed to conduct joint border patrols; however, beginning in January 2001 Senegal renewed its activities across their common border.

Mauritania

Senegal's relations with Mauritania are similar to those with Guinea-Bissau. Attempts are quickly made to diffuse tense situations. Relations center on resettling refugees and increasing economic cooperation, although tension and fighting arise between residents of the shared border.

Most disputes are over boundaries. Senegal maintains that its border was defined under French colonialism; Mauritanians will accept this only if compensated for their property loss. Clashes between Mauritanian ranchers and Senegalese farmers are common. April 1989 until early 1992 marked a period of violence between the two countries that was prompted by a dispute over grazing rights. This was followed by Senegalese retaliation on Mauritanian nationals and businesses in Senegal, further inciting attacks by Mauritanians on the Senegalese.

The reprisals escalated. After an incident in which Senegalese fishing vessels were attacked by the Mauritanian navy, the Senegalese army began conducting operations across the border. This prompted the Mauritanians to begin conducting operations inside Senegalese territory in March 1991. Diplomatic relations were finally restored in April 1992 and the border reopened in May, but hundreds of lives had been lost during the period of violence.

Since the cessation of military operations, there has been a genuine effort between the two governments to improve their relations. Cooperative agreements addressing free trade, freedom of movement, and joint security arrangements have been signed since 1994. In January 1995, Senegal, Mauritania, and Mali signed a joint agreement concerning counter-drug operations, arms smuggling, and the resolution of border issues. In May 1999, economic relations between the two improved when an agreement providing for the joint exploration of fishing waters was signed. Unfortunately, the improved relations are confined only to the highest government levels while violent tendencies at the citizenry level persist.

Issues concerning black Mauritanians also add to tensions between the two neighbors. As of 2001, approximately 40,000 black Mauritanian refugees remain in Senegal following their expulsion during 1989-1990 because of their ethnicity. Encamped primarily along the Senegal River, they are unwelcome by northern Senegalese who regard them as bandits and with whom they compete for natural resources. Although Mauritania has offered to resettle the refugees, a majority of them refuse to return until they are guaranteed security, property rights, and recognition of a national identity. The presence of banned black Mauritanian opposition groups, such as the Mauritanian Forces of African Liberation (FLAM) and the United Front for Armed Resistance in Mauritania (FURAM), in Dakar are another source of grievance for the Mauritanian government.

ECONOMY

Senegal's economy, dominated by agriculture — particularly peanut production — is highly vulnerable to declining rainfall, desertification, and changes in world commodity prices.

The non-agricultural sector includes fishing, phosphates, tourism, and chemical industries.

Statistics

GDP (2000)	US$4.1 billion
GDP Per Capita (2000)	US$453
Average GDP (1999)	5.0%
Average Inflation Rate (1999)	0.8%
Total External Debt (1999)	US$3.617 million
Foreign Aid (1997)	US$426.6 million
Unemployment (1996)	23%
Occupations	
Agriculture	77%
Services	16%
Industry	7%
Trade Partners	France, other European Union countries, West African CFA Zone
Imports (1998)	US$1.26 million
Countries	EU, France, Nigeria, Cameroon, U.S., Japan
Exports (1998)	US$976,000
Countries	India, EU, France, UEMOA, Mali
Foreign Aid Received (2000)	US$361 million from all sources, US$24.7 million from U.S.

Agriculture

Senegal's principal agricultural products include peanuts, millet, sorghum, and rice. Peanuts are grown mainly in central Senegal; sorghum and millet in the central and northern regions; and rice in the Senegal River valley and the southern region of Casamance. Cowpeas are a significant subsistence level crop. Large-scale agriculture is limited primarily to sugar and rice production, mainly along the Senegal River Valley. Rice farmers cannot compete in the rice market, which is flooded with Asian imports. Senegalese grain production surpasses 1 million tons in good seasons but declines sharply during dry ones. Peanut productivity is volatile, as are prices. Over the past decade, Senegal's peanut production has fallen from 837,000 tons in 1995/96 to an estimated 539,000 tons in 1997/98, then rebounded to 725,000 tons in 1998/99. Cotton is a relatively new cash crop cultivated primarily in the south. Despite the low price of cotton on the world market and low crop yields, the number of producers in Senegal has increased in recent years. This is attributed to crop regulation and price guarantees by the government. Senegal's textile industry buys Senegalese cotton at a higher price than it would have to pay on the international market making it less competitive on the world market. Although Senegal remains a net importer of meat, livestock production is extensive. In 1998 government estimates placed the livestock population at 2.9 million cattle and 8 million sheep and goats. Ranches are primarily family owned.

Resources

Constituting 30 percent of exports in 1998, and employing 15 percent of Senegal's workforce, the fishing industry is Senegal's largest source of foreign exchange and the second most important source of employment. Catches increased from 417,000 tons in 1993 to 448,000 tons in 1998, with significant contribution from small-scale fishing, which supplies the domestic market and the regional one.

A 4-year fishing accord was signed with the European Union in 1997; under this, 50 billion CFAF are to be invested in the fishing industry.

The accord will target small-scale fishing by providing fishing equipment and access to credit, technical assistance, and fishing infrastructure such as fishing docks and refrigeration facilities.

Senegal has mines of calcium phosphates in Taiba and aluminum phosphates in Thies. Although the mine at Taiba is near depletion, work is underway to bring a new mine into operation at Tobene. Total national reserves are estimated at 100 million tons of calcium phosphates and 60 million tons of aluminum phosphates. There are large-scale, good-quality iron ore deposits at Faleme, in the east close to the border with Mali.

Other mineral reserves include iron, gold, copper, diamonds, titanium and peats. Although mining accounts for less than 2 percent of GDP, phosphates and derived products accounted for an estimated 16 percent of merchandise exports in 1998. Phosphates mining totaled 1.7 million tons in 1998.

There is increased foreign interest in gold, copper, and other mineral deposits in Senegal's eastern regions. However, infrastructure is inadequate in rural regions, where a majority of deposits are found, as well as developmental costs. The most promising unexplored deposits are at Semme; they contain an estimated 40 million tons of calcium phosphate.

Gas and oil deposits have also been identified. The M'bao oil refinery, south of Dakar, is the primary facility in Senegal and is a consortium of foreign distributors. The refinery has a capacity of 1.4 million tons per year; mainly for domestic consumption but Mali is a major export destination. Crude and refined oil imports amounted to 1.3 million tons in 1998.

Services

Fossil fuel production is limited and the country's modern sector has to import almost all of its energy requirements in oil and natural gas. The country's electricity supply is thermally generated. The sole power company, the Societe Nationale Senegalaise d'electricite (SENELEC), is privately owned and produces a total of 230 megawatts. SENELEC's

production suffers from obsolete equipment and inefficient practices. A small natural gas reserve at Diam-Niade Kabor provides up to 20 percent of SENELEC's needs. A large natural gas deposit also exists in Gadiaga, near Thies. Although half of all urban areas are connected to the national power grid, the proportion falls to just 5 percent in rural areas. In 1999, a consortium led by Hydro Quebec of Canada purchased a 34 percent share of SENELEC and took over its management. Although there have been attempts to exploit Senegal's offshore and land oil reserves, there exists only one small land well situated near Dakar which also produces small quantities of natural gas.

Ninety-two percent of people in urban areas have access to safe water. Sixty-five percent of people in rural areas have safe water. Most people in villages get their water from wells. In the southern part of Senegal, water is more plentiful and the wells are not dug very deep. During the rainy season (June to October), the wells stay full. Water in the wells is usually clear, but can become murky when used frequently.

THREAT

Crime

Street crime in Senegal poses moderate risks for visitors. Most reported incidents involve pickpockets, purse-snatchers, and street scam artists. Visitors should be especially alert to such activities at events that draw large crowds or when international meetings occur. In Dakar, there has been a relatively high incidence of purse-snatchings and muggings in a popular restaurant area known locally as "La Petite Corniche," located along a 3-kilometer stretch of coastal road in the southeastern part of the city. The international airport has a high occurrence of petty crimes.

Travel Security

Road conditions in Senegal range from adequate to poor. Travelers should remain on the major, hard-surfaced routes and drive during day-

light hours only. Paved roads link most major cities but are often in poor repair. Drivers should expect to encounter stretches of roadways with potholes and other obstacles. Rural roads range from well maintained dirt and gravel routes to sand tracks. Traffic accidents are a leading cause of injury and death in Senegal. Visitors who drive should take the time to learn local traffic rules and drive defensively. Visitors should be cautious when using public transportation, particularly if the vehicle appears to be overcrowded and/or poorly maintained.

Drug Trafficking

Senegal is a major transit point for heroin, cocaine, and psychotropic depressants. The Casamance region is heavily cultivated for marijuana, which is the primary drug used in Senegal. Drug networks, operated mainly by foreigners, engage in marijuana trafficking. Both the port and airport of Dakar are main transit points for the importation and exportation of drugs. Cape Verde serves as a major transit point for cocaine entering Senegal. Senegal's customs and its *gendarmerie* are actively engaged in counterdrug efforts, but budgetary constraints have hampered their effort. In 1999 in Casamance 42,000 kilograms of cannabis were destroyed, 71 grams of heroin were seized, 32 grams of cocaine were seized, and 2,674 users and traffickers were arrested (80 of these were foreigners).

Opposition Forces

Movement of Democratic Forces in the Casamance

Composed of members of the Diola tribe wishing to establish an independent Casamance, the MFDC has been waging a violent campaign against the Senegalese government since 1982. Initially restricting its activities to organized demonstrations and protests, the MFDC soon resorted to more violent tactics to counter the government's use of force and mass arrests. In 1984, the government asserted itself by dividing the region territorially. As international criticism toward the government's handling of the situation grew and the election season approached, President Diouf granted

amnesties, released detainees, negotiated, and conducted internal counter-insurgency operations. The policy has been moderately successful.

Current estimates place the MFDC's armed guerrilla strength at approximately 500 personnel; they also have a large noncombatant support base that provides them shelter and food supplies. The organization split into MFDC Front Nord and MFDC Front Sud following differences over a ceasefire agreement facilitated by Guinea-Bissau in 1992. Father Augustin Diamacoune Senghor (Father Diamacoune) is still recognized as the overall leader holding the position of Secretary General. Furthermore, although recognized as two independent organizations, they do engage in discussions to coordinate their positions when entering into negotiations with the government.

Led by Kamougue Diatta, Front Nord is primarily engaged on a diplomatic level rather than military one. It espouses the need for increased autonomy. The group seeks economic development in Casamance, but opposes Wolof domination in the business sector. Of concern to Front Nord is cultural absorption into a greater Senegal dominated by Islam.

Front Sud is considered the more extreme group. It is led by Salif Sadio; it continues the military struggle to obtain total independence of the Casamance from Senegal. Operating from bases along and across the Senegalese-Guinea-Bissau border, it confine its attacks to the Kolda and Ziguinchor districts. These attacks often coincide with significant Senegalese political events, particularly elections, and involve administrative targets. Command and control is extremely decentralized, leaving some to hypothesize that individual unit commanders often conduct independent unit operations without Sadio's knowledge or consent. Suspicions also persist that many rogue elements claiming affiliation with the MFDC are, in fact, independent gangs or bandits that engage primarily in pillaging.

Arms smuggled in from Guinea-Bissau beginning in the early 1980s are primarily of Soviet and Portuguese origin and are severely outdated.

The arsenal primarily consists of antipersonnel mines, small arms (AK-47, G-3 automatic rifles), bazookas, mortars, and possibly man-portable air defense systems (MANPADS). General Ansumane Mane, an MFDC ally, and sympathizers from the Guinea-Bissau army may have provided military training. Operating in squad-sized elements, guerrillas conduct ambushes on military convoys traveling in the region, raids on police stations, and raids on villages along the borders to obtain supplies. Although armed attacks are launched primarily against government targets, villagers who do not directly support the MFDC cause often become victims of theft, rape, arson, murder, and extortion. The separatists also engage in hijacking and kidnapping.

Major confrontations among rebel factions began in late December 2000. Acting in agreement with Father Diamacoune, the chief-of-staff of the guerrilla forces, Leopold Sagna, launched an offensive against the guerrillas of Salif Sadio. Withdrawing across the border into Guinea-Bissau, Sadio's fighters were then attacked by that country's armed forces, which inflicted heavy losses. The attack confirmed Guinea-Bissau President Kumba Yalla's commitment to rid his country of the MFDC.

Rebel Soldier (Courtesy BBC)

On 12 February 2001, Father Diamacoune dismissed three key figures: Sidy Badji, the former military commander of the MFDC's Front Nord; Abdoulaye Diedhiou, secretary of the MFDC's external wing; and Alexandre Djiba, the MFDC spokesman based in the Gambian capital, Banjul, on accusations of insubordination. They were replaced by four new fig-

ures including Nkrumah Sane, one of the most outspoken advocates of independence, who has become first deputy secretary-general of the MFDC. Sane quickly reiterated his belief that only complete independence would resolve the Casamance crisis, and argued that the MFDC should not sign a ceasefire until Casamance was "liberated." Ansoumane Badji, the new spokesman, suggested that the MFDC might be willing to settle for a measure of autonomy for the Casamance while remaining a part of Senegal.

On 16 March 2001, a peace agreement was signed between the government and Father Diamacoune. The agreement calls for freedom of movement and the protection of people and their property. It also includes a commitment by both sides to halt arbitrary arrests, kidnappings, killings, the use of torture and armed robberies, the freeing of prisoners, the return of refugees and displaced people, the implementation of programs to reintegrate former combatants, and road construction projects to open up isolated regions of Casamance. Another accord, signed a week later, concerns the surrender of weapons and the quartering of Senegalese troops.

Threat to U.S. Personnel

In February and March 2001, groups of 40 to 50 MFDC fighters halted vehicles on major roads in northern Casamance, seized money and other valuables, and executed passengers and drivers (more than 20 civilians were killed). There are approximately 15,000 square kilometers of minefields in the region, mostly in western Casamance.

Terrorism

After 11 September 2001, Senegal hosted an antiterrorism conference, which included many other African nations; they declared their solidarity and support for the U.S. war against terrorism.

Violence in Senegal generally occurs in the form of skirmishes involving separatist rebels in the Casamance region. Senegalese forces as well

as citizens of bordering countries are often involved. However, the violence is not accurately categorized as terrorism, as civilians are not targeted specifically, though they sometimes get caught in the crossfire.

ARMED FORCES

Senegal's people have great respect and admiration for their armed forces, which they view as an honest and efficient national asset. They are proud of the military's participation in international peacekeeping operations.

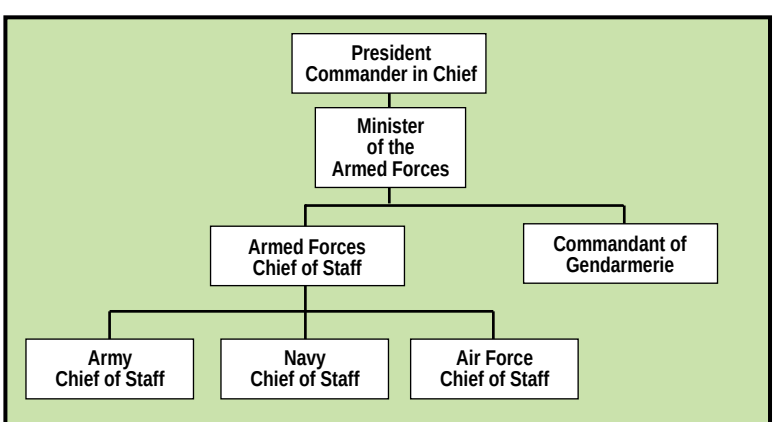
Civil-military relations are excellent. Since 1994, the armed forces have had a nation-building mission and the military has completed several important infrastructure projects. Donor-funded civic action activities include road building and school and clinic construction. One-third of Senegal's medical capability is in the military, and most hospitals are staffed by military and civilian doctors who treat both military and civilian patients. Additionally, military medical teams periodically go to rural areas to provide medical treatment. Military noninterference in political affairs has contributed to Senegal's stability since its independence.

Senegal has participated in numerous international and regional peacekeeping missions. In 1992, Senegal sent 1,500 men to the ECOMOG (Economic Community of West African States Monitoring Group) peacekeeping group in Liberia. In 1991, it sent a contingent to participate in Operation DESERT STORM. In 1978, the Senegalese contributed a 600-member battalion to the UN Interim Force in Lebanon and also dispatched a battalion to the Shaba province of Zaire (now renamed Kataanga Province of the Democratic Republic of the Congo) as part of the Inter-African Force assembled to counter dissident attacks against Kolwezi. In August 1981, the Senegalese military was invited into The Gambia by President Dawda Kairaba Jawara to put down a coup attempt. The Senegalese-Gambian military cooperation, which began with the joint Senegalese-Gambian efforts during the 1981 coup attempt, ceased in 1989 with the dissolution of the Senegambian Con-

federation. Senegal is participating in the UN peacekeeping operations in the Democratic Republic of the Congo (MONUC), and the Force Commander of that operation, Major General Mountaga Diallo, is Senegalese. They have also contributed civilian police personnel to UNAMSIL in Sierra Leone and MINURSO in Western Sahara.

Organization

Senegal's military consists of an army, navy, air force, National Gendarmerie, and National Police (*Surete Nationale*). It has approximately 8,000 army, 600 navy, and 750 air force personnel. Senegal's president is the supreme commander-in-chief of the armed forces. The armed forces chief of staff and the commandant of the *gendarmerie* each report directly to the minister of defense who then reports to the president. The service level chiefs of staff each report to the armed forces chief of staff. Similarly each *gendarmerie* legion commander reports directly to the commandant of the *gendarmerie*. Territorial zone commanders head Senegal's seven military zones. Each zone commander reports simultaneously to the army chief of staff and armed forces chief of staff. The



Armed Forces Organization

armed forces chief of staff retains control of the strategic reserve, commandos, paratroopers, and artillery battalions.

Mission and Strategy

The primary mission for the Senegalese armed forces is to provide for national defense. This is achieved by conducting counterinsurgency operations in the Casamance and by conducting routine patrols along Senegal's borders. At times it is deployed to Senegalese border towns to maintain order, typically involving refugee problems, and is on alert during election season.

Personnel

Senegal has well trained and disciplined armed forces consisting of about 11,000 personnel in the army, air force, and navy. Although military service in Senegal is mandatory, those eligible exceeds the requirements. Due to the high unemployment rate, military service is seen as an attractive option. Individuals must be at minimum 19 years-old; this is also the minimum for combatant age. A screening exam, which assesses basic reading and writing skills, must also be passed. The initial service obligation is 2 years with an option to extend based on the needs of the service. Only males are eligible for military service. Senegal's constitution prohibits military personnel from voting.

Training and Education

All military recruits, regardless of branch, receive 6 months of basic training, which teaches basic combat skills. Those given specialty assignments, such as a cook or mechanic, receive specialized training in that field. Its national training school is located in Saint-Louis where veterans train two recruit classes each cycle. The National Army Medical Corps School provides training opportunities to both males and females. Females are not allowed to serve in the military but will serve in a military medical facility upon completion. Senegal does not have any military academies from which to cultivate potential candidates. Instead this type

U.S. Soldier Training Senegalese Soldier

of training is received overseas in France, the U.S., Great Britain, Russia, or elsewhere after recruitment. Officer training schools are available through a competitive application procedure to males who possess, at minimum, a high school education. Upon successful completion of the officer training, the individual receives a 5-year appointment that can be extended based upon the needs of the service and is eligible for advanced training through foreign military cooperation programs. No special educational subsidies are provided to either the enlisted or officer ranks upon completion of service.

The Senegalese military force receives most of its training, equipment, and support from France. Morocco, the United States, Great Britain, and Germany also provide support but on a smaller scale. In 1997, the U.S. Special Forces initiated training Senegalese troops as part of the African Crisis Response Initiative (ACRI). Training consists of convoy security, checkpoint establishment, perimeter security, and secu-

rity patrols. In 1998, Turkey and Senegal signed military training cooperative agreements.

Capabilities

Senegal's armed forces are capable of limited deployments to conduct peacekeeping and counter insurgency operations. A lack of lift assets hampers its projection of power and inhibits its logistics. Senegal's limited capabilities are attributed to its very small defense budget. Senegal's defense budget for FY2001 was US$60 million As a result of this low funding, Senegal's military services encounter equipment shortages and maintenance problems. The air force is most heavily affected while the army fairs better in acquiring funding.

Force Disposition

In 1997, in an effort to improve command and control at an operational and administrative level, Senegal is divided into seven military zones transitioning from directional to numerical designators

Military Zone	Headquarters	Military Zone	Headquarters
1	Dakar	5	Ziguinchor
2	Saint-Louis	6	Kolda
3	Kaolack	7	Thies and Diourbel
4	Tambacounda		

Each military zone commander of zones 2 to 7 is assigned one army infantry battalion. The military's central headquarters is located in zone 1 (Dakar), while its strategic reserves are home based in military zone 7 (Thies). One engineer unit is situated in Barny. Marine, paratrooper, reconnaissance and artillery units are stationed at Military Zone 1. Commando companies are typically maintained at Camp Dial Diop in Dakar and in Ziguinchor.

Key Defense Personnel

Minister of the Armed Forces	Youba Sambou
Armed Forces Chief of Staff	General Babacar Gaye
Navy Chief of Staff	Captain Ousseynou Kombo
Army Chief of Staff	Colonel Antou Pierre Ndiaye
Air Force Chief of Staff	Colonel Mamadou Fall
Gendarmerie Commander	General Pathe Seck

Army

Organization

The Army consists of six infantry battalions, each of which is assigned to a territorial zone commander. Senegal's army consists of 10,000 troops. Senegal's army is very capable of conducting limited ground operations and deploying into foreign environments, as demonstrated by its engagements in Guinea-Bissau, Operation DESERT STORM, and various UN peacekeeping missions.

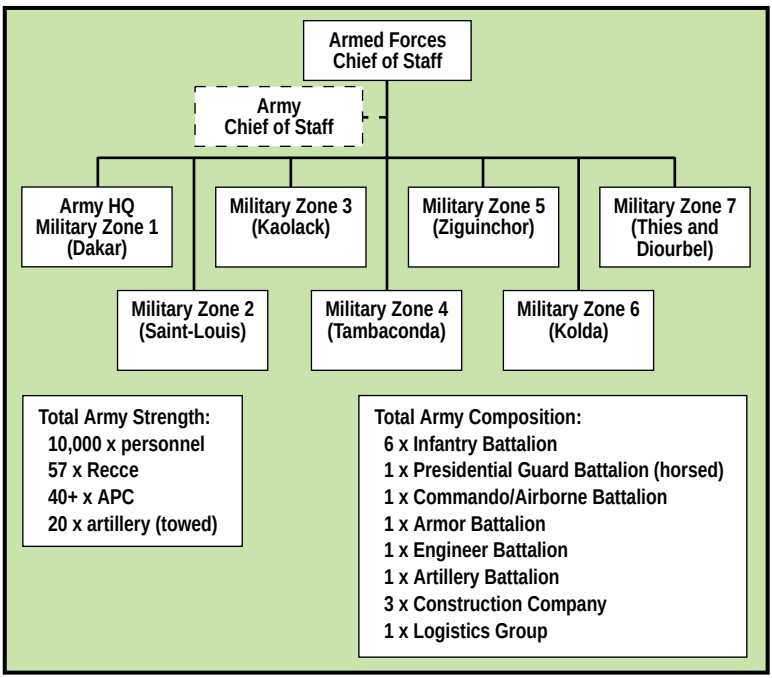
Equipment

Armor

Type	**Role**	**Quantity**
AML-60 Recce	Light Tank	30
AML-90 Recce	Light Tank	27
PANHARD M3	Armored Personnel Carrier	40
VXB-170	Armored Personnel Carrier	Unk
M3 Half-track	Armored Personnel Carrier	12

Artillery

Type	**Role**	**Quantity**
81-mm Brandt	Mortar	8
120-mm Brandt	Mortar	8
89-mm LRAC	Antitank Rocket Launcher	Unk
STRIM	Antitank Rocket Launcher	Unk
Milan ATGW	Antitank Guided Missile	4



Army Organization

Type	Role	Quantity
105-mm M101	Towed Howitzer	6
75-mm M116	Towed Howitzer	6
20-mm 53T2	Air Defense	21
40-mm L/60	Air Defense	14

Small Arms

Type	Role	Quantity
9-mm MAT-49	Submachinegun	Unk
7.5-mm AAT-52	Machinegun	Unk
.50-cal. Browning M2HB	Machinegun	Unk

Air Force

Organization

Senegal's air force is extremely small, consisting of 400 people. It lacks a discernible structure. It is separate from the army. It is entirely based in Dakar, but has operated in Ziguinchor and Kedougou and has a cadet school in Thies. It has conducted limited bombing campaigns in the Casamance region along the border with Guinea-Bissau, but is incapable of conducting strategic and cohesive aerial operations because of training deficiencies and equipment shortages.

Equipment

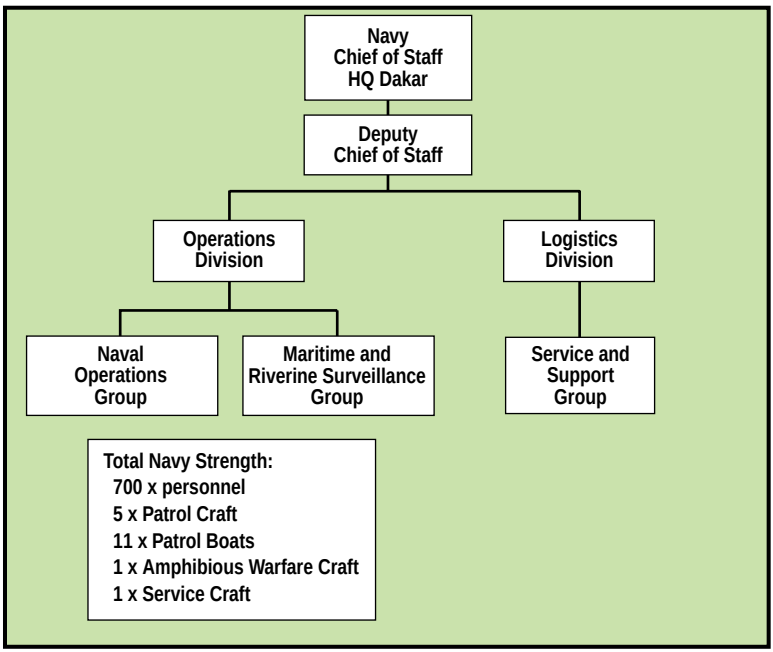
Type	Role	Quantity
DHC-6 Twin Otter	Patrol	1
R-235G Guerrier	Combat	4
SA-318C Alouette II	Liaison	2
CM-130 Magister	Trainer/COIN	5
F-27 400M Friendship	Transport	6
Boeing 727-2M1	VIP Transport	1

The DHC-6 is actually a naval coastal plane but the air force is responsible for its maintenance. The 727 is used as the president's transport.

Navy

Organization

Senegal's navy consists of 700 people and consists of an operations division, a logistics division, and 3 groups: naval operations, service and support, and maritime and riverine surveillance. Its overall mission includes defense, security, and law enforcement activities. Missions include providing logistical support to other services, conducting coastal and riverine patrols, enforcing Senegal's exclusive economic zone (EEZ), anti-smug-



Naval Organization

gling operations, search and rescue, and environmental safety. The maritime and riverine surveillance group conducts anti-smuggling and counternarcotics operations in the Casamance region and along Senegal's southern coast. The navy's principal ports are located in Dakar and Ziguinchor.

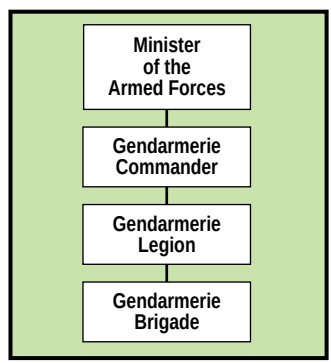
Equipment

Type	Role	Quantity
Osprey 55 (Denmark)	Patrol Craft	1
PR-72 MS (France)	Patrol Craft	1
PR-48 (France)	Patrol Craft	3
Peterson 51-foot class (U.S.)	Patrol Boat	2

Type	Role	Quantity
Turbec Interceptor (Canada)	Patrol Boat	3
EDIC 700 (France)	Utility Landing Craft	1
Research Craft (Japan)	Service Craft	1
LVI 85S (Spain)	Patrol Boat	4
Type DS-01 (Spain)	Patrol Boat	2

Paramilitary Forces

The *Gendarmerie*, formed in 1984, consists of approximately 5,800 personnel. It is equipped with light arms, VXB-170 APCs, jeeps, and trucks. Units are stationed in Zinguinchor, Tambacounda, Fatick, and Kolda districts. Its mission includes border patrols, counterdrug operations, and supplementing police security during incidents of increased violence or potential for violence. In 1987, the *Gendarmerie* filled in for striking police forces in Dakar. In 1998, they were dispatched to Bakel (Senegalese border town) to restore order following a series of reprisal attacks between Mauritanian refugees and Senegalese villagers. During election season, the *gendarmes* are routinely used to maintain security at the voting booths and as a deterrent for riots. During the 2000 elections, the *Gendarmerie* were second in line to provide security behind the police. They conduct various operations in the Casamance, along the Saloum River, and along the borders.



Gendarmerie Organization

Historically, *Gendarmerie* forces have also assisted in customs operations and the armed forces. In 1997 they assisted the Senegalese military in mop-up operations against the MFDC military bases.

National Police

The National Police (Surete Nationale) are responsible for maintaining general order and enforcing basic laws. They work with the military to keep order in the volatile Casamance region, where the distinction between military and police action can be blurred. In 1998 and 1999, Senegal's armed forces and the National Police participated in programs to learn to coordinate efforts and clarify their missions in Casamance, while respecting international humanitarian law.

APPENDIX A:
Equipment Recognition

INFANTRY WEAPONS

9-mm MAT-49

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

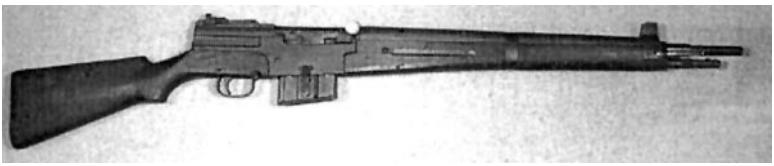
5.56-mm HK33

Maximum Effective Range	600 m
Caliber	5.56 x 45-mm
System of Operation	Delayed blowback, selective fire
Length	925 mm (fixed stock); 940 mm (extended stock)
Feed Device	20- or 30-rd box magazine
Weight	3.9 kg without magazine)

5.56-mm HK53

Maximum Effective Range	600 m
Caliber	5.56 x 45-mm
System of Operation	Delayed blowback, selective fire
Overall Length	590 mm (butt retracted); 780 mm (butt extended)
Feed Device	20- or 30-rd box magazine
Weight	3 kg without magazine)

7.5-mm MAS 49/56



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

7.62-mm G3

Maximum Effective Range	400 m
Caliber	7.63 x 51-mm
System of Operation	Delayed blowback, selective fire
Overall Length	1.025 m
Magazine Capacity	20-rd detachable, staggered-row box magazine
Weight	4.4 kg (empty)

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-rd 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.**

5.56-mm SIG 540

Maximum Effective Range	600 m
Caliber	5.56-mm
System of Operation	Gas, selective fire
Overall Length	720 mm (folding stock); 900 mm (fixed stock)
Feed Device	20- or 30-rd detachable box magazine
Weight (Loaded)	3.31 kg (folding stock); 3.26 kg (fixed stock)

5.56-mm FAMAS

Maximum Effective Range	300 m
Caliber	5.56 x 45-mm
System of Operation	Delayed blowback, selective fire, and 3-rd burst capability
Overall Length	757 mm
Feed Device	25-rd detachable box magazine
Weight (Empty)	3.61 kg

7.62-mm AK-47

Maximum Effective Range	400 m
Caliber	7.62 x 39-mm
System of Operation	Gas, selective-fire
Length	869 mm
Magazine Capacity	30-rd, staggered row, detachable box magazine
Weight	4.3 kg

7.5-mm AAT Model 52

Maximum Effective Range	800 m
Caliber	7.5 x 51-mm
System of Operation	Delayed blowback, belt feeding
Overall Length	1,080 mm with long barrel
Capacity	50 or 200-round belts
Weight	23 kg on tripod

HK21 7.62-mm

Maximum Effective Range	1,000 m
Caliber	7.62 x 51- mm
System of Operation	Delayed blowback, automatic
Overall Length	1,021 mm
Feed	Belt
Weight	7.32 kg

50 cal. Browning M2 HB

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

AML-90

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

AML-60

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

M8 Light Armored Car

Crew	4
Type	6 x 6
Armament	1 x 37-mm gun w/80 rds 1 x 7.62-mm coaxial MG w/1,500 rds 1 x 12.7-mm AA MG w/400 rds
Maximum Speed	90 km/h
Maximum Range	560 km
Fuel Capacity	212 liters
Combat Weight	7,892 kg
Length	5.003 m
Width	2.54 m
Height	2.247 m
Night Vision	No
NBC	No
Fording	0.609 m
Gradient	60%
Vertical Obstacle	0.304 m

M20 Armored Utility Car

Crew/Passengers	2+4
Type	6 x 6
Armament	1 x 12.7-mm AA MG w/1,000 rds
Maximum Speed	90 km/h
Maximum Range	560 km
Fuel Capacity	212 liters
Combat Weight	6,567 kg
Length	5.003 m
Width	2.54 m
Height	2.247 m
Night Vision	No
NBC	No
Fording	0.609 m
Gradient	60%
Vertical Obstacle	0.304 m

Panhard M3

Crew/Passengers	2 + 10
Configuration	4x4
Night Vision	Optional
NBC Capable	No
Maximum Road Range	600 km
Maximum Speed	(Road)90 km/h (Water) 4 km/h
Gradient	60%
Trench	0.8 m
Combat Weight	6,100 kg
Height	2 m
Length	4.45 m
Width	2.4 m

VXB-170

Crew/Passengers	1 + 11
Configuration	4x4
Night Vision	No
NBC Capable	No
Maximum Road Range	750 km
Maximum Speed	(Road)85 km/h (Water) 4 km/h
Fording	Amphibious
Gradient	60%
Combat Weight	12,700 kg
Height	2.05 m
Length	5.99 m
Width	2.5 m

AIR DEFENSE

20-mm 53T2

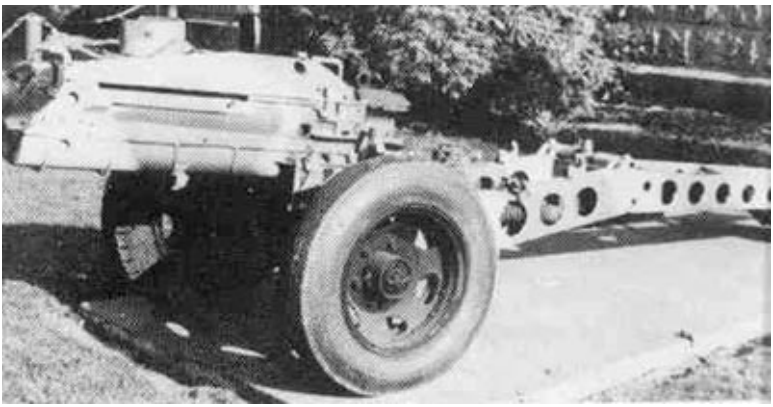
Crew	2-3 (one on gun)
Maximum Range	5,500 m (vertical) 7,000 m (horizontal)
Rate of Fire (Per Barrel)	900 rds/min
Maximum elevation	40°
Reload time	15-30 seconds
Maximum travel speed	Towed up to 60 km/h
Combat Weight	840 kg

Bofors 40-mm L/70

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

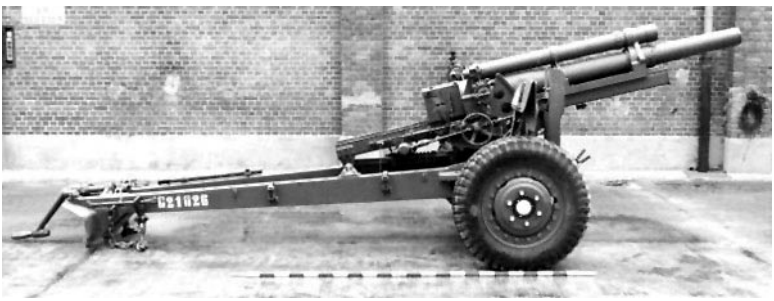
ARTILLERY

75-mm M116 Pack Howitzer



Crew	5
Maximum Range	8,790 m
Rate of Fire	6 rds/min (short bursts) 3 rds/min (sustained)
Combat Weight	653 kg. (firing)
Length	3.658 m (travelling)
Width	1.194 m (travelling)
Height	0.94 m (travelling)
Prime Mover	4 x 4 truck

105-mm M101 Howitzer



Crew	8
Caliber	105-mm
Maximum Range	11,270 m.
Rate of Fire	10 rds/min (maximum) 3 rds/min (sustained)
Prime Mover	6 x 6 truck
Length	5.991 m. (travelling)
Weight	2,258 kg (firing)

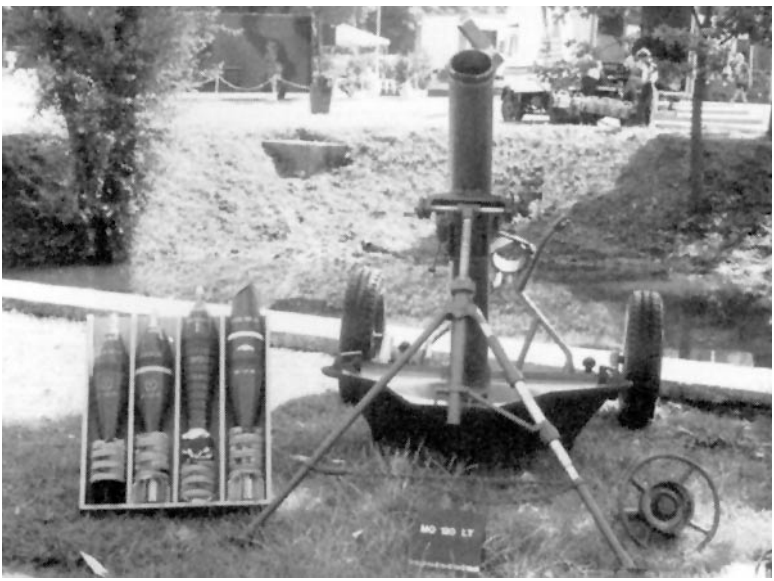
M114

Crew	11
Maximum Range	14,600 m
Rate of Fire	40 rds/h
Combat Weight	5,760 kg
Length	7.315 m
Width	2.438 m
Height	1.803 m
Prime Mover	6 x 6

81-mm MO-81-61 Mortar

Crew	3
Caliber	81-mm
Maximum Range	5,000 m
Rate of Fire	10 rds/min (normal) 15 rds/min (burst) 8 rds/min (sustained)
Tube Length	1150.0 mm (MO-81-61C) 1450.0 mm (MO-81-61L)
Weight	42 kg

120-mm Brandt

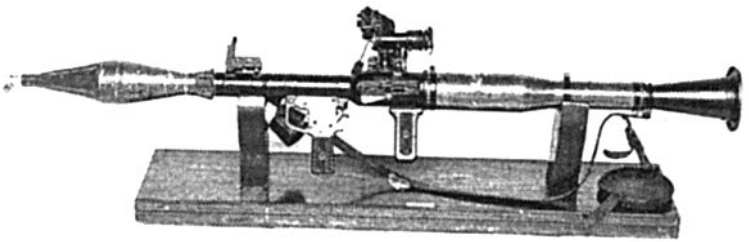


Minimum range	500 m
Maximum range	9,000 m
Traverse limits	17°
Ammunition types	HE, HE-RA, smoke, illum, practice, marker
Travelling Weight	402 kg
Length of barrel	1.746 m with breech cap
Elevation	+45 to +80°
Rate of fire	12 rds/min

MILAN Ground Launcher

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

RPG-7

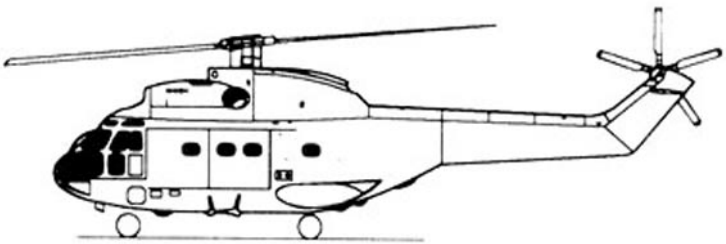


Maximum Effective Range	1,700 m
Caliber	30-mm
Overall Length	1.1 m

89-mm LRAC

Type	Shoulder-fired anti-tank weapon
Maximum Effective Range	400 m
Caliber	89-mm
Length of round	600 mm
Overall Length	1,600 mm

SA 330 PUMA



Mission	Transport, VIP
Armament	Possible guns/rockets
Payload	3,650 kg or 20 troops
Maximum Range	282 nm
Cruising Speed	138 knots
Length	14.8 m
Width	3.6 m
Height	4.5 m
Engine	Twin turbo shaft

Comments: Upgraded variant produced as AS-332 SUPER PUMA.

SA-318C Alouette II

Crew/Passengers	1+4
Armament	Assorted missiles or rockets
Maximum Cruising Speed	97 knots
Maximum Range	720 km
Rotor Diameter	10.20 m
Length	12.10 m (rotors turning)
Height	2.75 m

NOTE: Above SA-318 shown in use as a cropduster

SA-341 Gazelle

Crew/Passengers	1+4
Armament	Assorted missiles or rockets; two forward-firing 7.62 mm machine guns
Maximum Cruising Speed	264 km/h
Maximum Range	670 km
Rotor Diameter	10.50 m
Length	11.97 m (rotors turning)
Height	2.72 m

Fokker F27 Friendship

Type	Twin-turboprop, short-range transport
Crew/Passengers	2+52
Wingspan	29 m
Normal Cruising Speed	480 km/h
Maximum Range	1,158 km
Length	23.56 m
Height	8.59 m

De Havilland DHC-6 300 Twin Otter

Type	Twin-turboprop, STOL transport, reconnaissance
Crew/Passengers	2+20
Maximum Cruising Speed	328 km/h
Maximum Range	222 km
Length	23.56 m
Height	8.59 m

SURFACE SHIPS

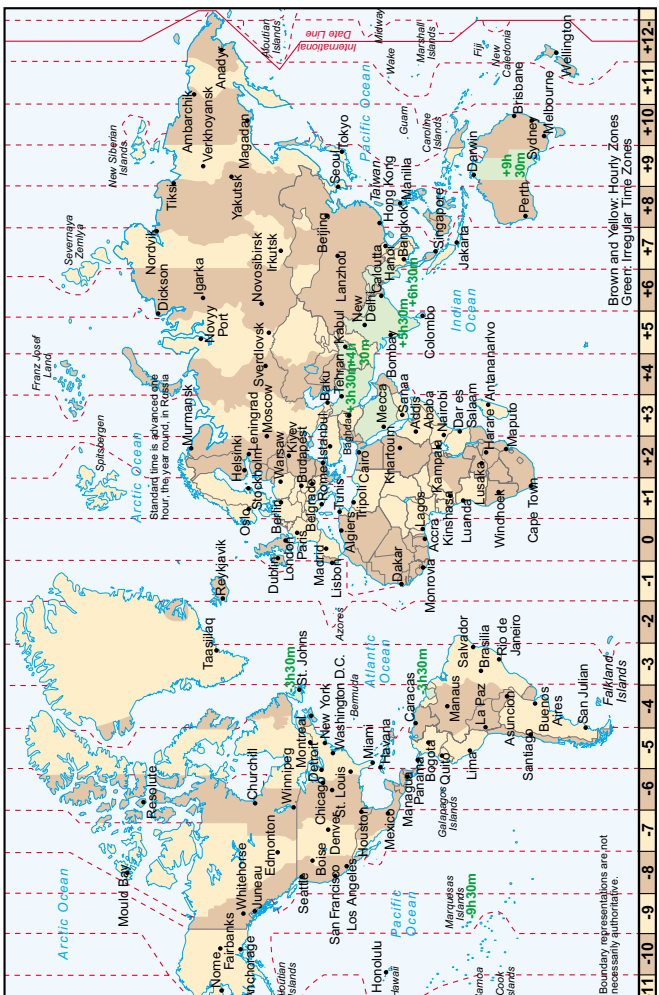
EDIC 700 Class

Type	Large patrol craft
Complement	18
Maximum Speed	12 knots
Maximum Range	1,800 n miles at 12 knots
Armament	1 7.62-mm MG; 1 Oerlikon 20-mm
Displacement (tons)	747 full
Dimensions (meters)	59 x 11.6 x 1.7

FOUTA - Osprey 55 Class

Type	Large patrol craft
Complement	38 (4 officers) plus 8 spare
Maximum Speed	20 knots
Maximum Range	4,000 miles at 16 knots
Armament	1 Hispano Suiza 30-mm; 1 Giat 20-mm
Displacement (tons)	470 full
Dimensions (meters)	55 x 10.3 x 26

APPENDIX B:
International Time Zones



Greenwich Mean Time (GMT)

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

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

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

Country	GMT	Eastern	Central	Mountain	Pacific
Eritrea	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Estonia	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Ethiopia	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Falkland Islands	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Fiji Islands	+12.0 H	+17.0 H	+18.0 H	+19.0 H	+20.0 H
Finland	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
France	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
French Antilles	-3.0 H	+2.0 H	+3.0 H	+4.0 H	+5.0 H
French Guinea	-3.0 H	+2.0 H	+3.0 H	+4.0 H	+5.0 H
French Polynesia	-10.0 H	-5.0 H	-4.0 H	-3.0 H	-2.0 H
Gabon Republic	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Gambia	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Georgia	+4.0 H	+9.0 H	+10.0 H	+11.0 H	+12.0 H
Germany	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Ghana	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Gibralter	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Greece	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Greenland	-3.0 H	+2.0 H	+3.0 H	+4.0 H	+5.0 H
Grenada	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Guadeloupe	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Guam	+10.0 H	+15.0 H	+16.0 H	+17.0 H	+18.0 H
Guatemala	-6.0 H	-1.0 H	+0.0 H	+1.0 H	+2.0 H
Guinea-Bissau	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Guinea	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Guyana	-3.0 H	+2.0 H	+3.0 H	+4.0 H	+5.0 H
Haiti	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
Honduras	-6.0 H	-1.0 H	+0.0 H	+1.0 H	+2.0 H
Hong Kong	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H
Hungary	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Iceland	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
India	+5.5 H	+10.5 H	+11.5 H	+12.5 H	+13.5 H
Indonesia East	+9.0 H	+14.0 H	+15.0 H	+16.0 H	+17.0 H
Indonesia Central	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H
Indonesia West	+7.0 H	+12.0 H	+13.0 H	+14.0 H	+15.0 H
Iran	+3.5 H	+8.5 H	+9.5 H	+10.5 H	+11.5 H
Iraq	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H

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

Country	GMT	Eastern	Central	Mountain	Pacific
Monaco	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Mongolia	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H
Morocco	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Mozambique	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Myanmar (Burma)	+6.5 H	+11.5 H	+12.5 H	+13.5 H	+14.5 H
Namibia	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Nauru	+12.0 H	+17.0 H	+18.0 H	+19.0 H	+20.0 H
Nepal	+5.5 H	+10.5 H	+11.5 H	+12.5 H	+13.5 H
Netherlands	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Netherlands Antilles	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
New Caledonia	+11.0 H	+16.0 H	+17.0 H	+18.0 H	+19.0 H
New Zealand	+12.0 H	+17.0 H	+18.0 H	+19.0 H	+20.0 H
Newfoundland	-3.5 H	+1.5 H	+2.5 H	+3.5 H	+4.5 H
Nicaragau	-6.0 H	-1.0 H	+0.0 H	+1.0 H	+2.0 H
Nigeria	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Niger Republic	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Norfolk Island	+11.5 H	+16.5 H	+17.5 H	+18.5 H	+19.5 H
Norway	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Oman	+4.0 H	+9.0 H	+10.0 H	+11.0 H	+12.0 H
Pakistan	+5.0 H	+10.0 H	+11.0 H	+12.0 H	+13.0 H
Palau	+9.0 H	+14.0 H	+15.0 H	+16.0 H	+17.0 H
Panama, Rep. of	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
Papau New Guinea	+10.0 H	+15.0 H	+16.0 H	+17.0 H	+18.0 H
Paraguay	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Peru	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
Philippines	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H
Poland	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Portugal	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Puerto Rico	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Qatar	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Reunion Island	+4.0 H	+9.0 H	+10.0 H	+11.0 H	+12.0 H
Romania	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Russia West	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Russia Central 1	+4.0 H	+9.0 H	+10.0 H	+11.0 H	+12.0 H
Russia Central 2	+7.0 H	+12.0 H	+13.0 H	+14.0 H	+15.0 H
Russia East	+11.0 H	+16.0 H	+17.0 H	+18.0 H	+19.0 H

Country	GMT	Eastern	Central	Mountain	Pacific
Rwanda	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Niger Republic	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Norfolk Island	+11.5 H	+16.5 H	+17.5 H	+18.5 H	+19.5 H
Norway	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Oman	+4.0 H	+9.0 H	+10.0 H	+11.0 H	+12.0 H
Pakistan	+5.0 H	+10.0 H	+11.0 H	+12.0 H	+13.0 H
Palau	+9.0 H	+14.0 H	+15.0 H	+16.0 H	+17.0 H
Panama, Rep. of	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
Papau New Guinea	+10.0 H	+15.0 H	+16.0 H	+17.0 H	+18.0 H
Paraguay	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Peru	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
Philippines	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H
Poland	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Portugal	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Puerto Rico	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Qatar	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Reunion Island	+4.0 H	+9.0 H	+10.0 H	+11.0 H	+12.0 H
Romania	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Russia West	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Russia Central 1	+4.0 H	+9.0 H	+10.0 H	+11.0 H	+12.0 H
Russia Central 2	+7.0 H	+12.0 H	+13.0 H	+14.0 H	+15.0 H
Russia East	+11.0 H	+16.0 H	+17.0 H	+18.0 H	+19.0 H
Rwanda	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Saba	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Samoa	-11.0 H	-6.0 H	-5.0 H	-4.0 H	-3.0 H
San Marino	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Sao Tome	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Saudi Arabia	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Senegal	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Seychelles Islands	+4.0 H	+9.0 H	+10.0 H	+11.0 H	+12.0 H
Sierra Leone	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Singapore	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H
Slovakia	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Slovenia	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Solomon Islands	+11.0 H	+16.0 H	+17.0 H	+18.0 H	+19.0 H
Somalia	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H

Country	GMT	Eastern	Central	Mountain	Pacific
South Africa	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Spain	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Sri Lanka	+5.5 H	+10.5 H	+11.5 H	+12.5 H	+13.5 H
St. Lucia	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
St. Maarteen	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
St. Pierre & Miquelon	-3.0 H	+2.0 H	+3.0 H	+4.0 H	+5.0 H
St. Thomas	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
St. Vincent	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Sudan	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Suriname	-3.0 H	+2.0 H	+3.0 H	+4.0 H	+5.0 H
Swaziland	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Sweden	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Switzerland	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Syria	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Taiwan	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H
Tajikistan	+6.0 H	+11.0 H	+12.0 H	+13.0 H	+14.0 H
Tanzania	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Thailand	+7.0 H	+12.0 H	+13.0 H	+14.0 H	+15.0 H
Togo	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Tonga Islands	+13.0 H	+18.0 H	+19.0 H	+20.0 H	+21.0 H
Trinidad and Tobago	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Tunisia	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Turkey	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Turkmenistan	+5.0 H	+10.0 H	+11.0 H	+12.0 H	+13.0 H
Turks and Caicos	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
Tuvalu	+12.0 H	+17.0 H	+18.0 H	+19.0 H	+20.0 H
Uganda	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Ukraine	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
United Arab Emirates	+4.0 H	+9.0 H	+10.0 H	+11.0 H	+12.0 H
United Kingdom	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Uruguay	-3.0 H	+2.0 H	+3.0 H	+4.0 H	+5.0 H
USA Eastern	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
USA Central	-6.0 H	-1.0 H	+0.0 H	+1.0 H	+2.0 H
USA Mountain	-7.0 H	-2.0 H	-1.0 H	+0.0 H	+1.0 H
USA Western	-8.0 H	-3.0 H	-2.0 H	-1.0 H	+0.0 H
USA Alaska	-9.0 H	-4.0 H	-3.0 H	-2.0 H	-1.0 H

Country	GMT	Eastern	Central	Mountain	Pacific
USA Hawaii	-10.0 H	-5.0 H	-4.0 H	-3.0 H	-2.0 H
Uzbekistan	+5.0 H	+10.0 H	+11.0 H	+12.0 H	+13.0 H
Vanuatu	+11.0 H	+16.0 H	+17.0 H	+18.0 H	+19.0 H
Vatican City	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Venezuela	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Vietnam	+7.0 H	+12.0 H	+13.0 H	+14.0 H	+15.0 H
Wallis & Futuna Islands	+12.0 H	+17.0 H	+18.0 H	+19.0 H	+20.0 H
Yemen	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Yugoslavia	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Zaire	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Zambia	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Zimbabwe	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H

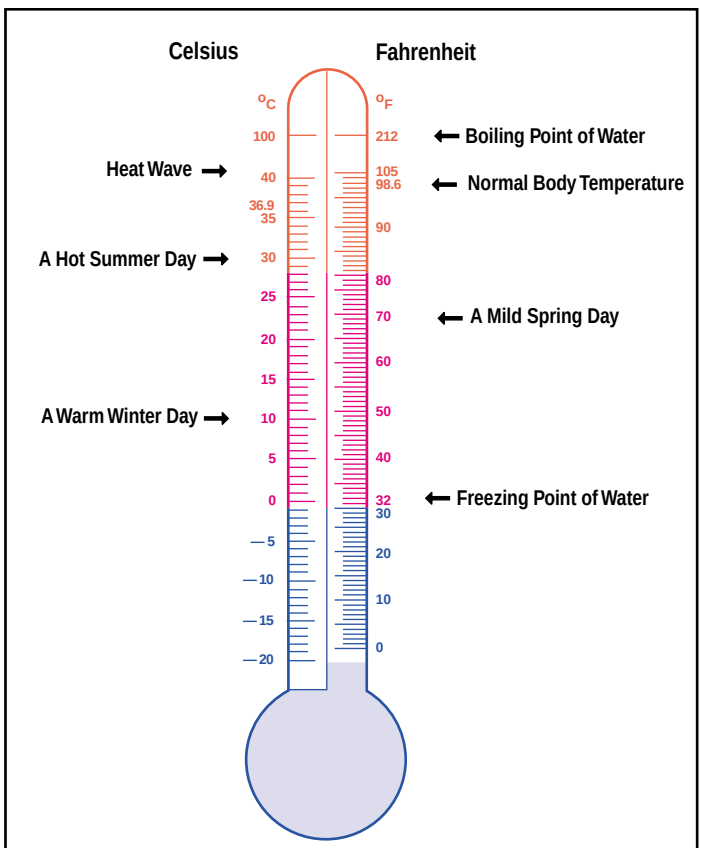
APPENDIX C:
Conversion Charts

When You Know Units of Length	Multiply by	To find
Millimeters	0.04	Inches
Centimeters	0.39	Inches
Meters	3.28	Feet
Meters	1.09	Yards
Kilometers	0.62	Miles
Inches	25.40	Millimeters
Inches	2.54	Centimeters
Feet	30.48	Centimeters
Yards	0.91	Meters
Miles	1.61	Kilometers
Units of Area		
Sq. Centimeters	0.16	Sq. Inches
Sq. Meters	1.20	Sq. Yards
Sq. Kilometers	0.39	Sq. Miles
Hectares	2.47	Acres
Sq. Inches	6.45	Sq. Cm
Sq. Feet	0.09	Sq. Meters
Sq. Yards	0.84	Sq. Meters
Sq. Miles	2.60	Sq. Km
Acres	0.40	Hectares
Units of Mass and Weight		
Grams	0.035	Ounces
Kilograms	2.21	Pounds
Tons (100kg)	1.10	Short Tons
Ounces	28.35	Grams
Pounds	0.45	Kilograms
Short Tons	2.12	Tons

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

Temperature

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



Temperature Chart

APPENDIX D:
Holidays

Holidays

1 January	New Year's Day (Public Holiday)
Easter Monday	Monday after Easter (Public Holiday)(Christian)
4 April	Independence Day (from France 1960)
1 May	Labor Day
Ascension	40 days after Easter (Public Holiday)(Christian)
WhitMonday	Monday after Pentecost (Pentecost occurs 50 days after Easter) (Christian)
15 August	Assumption of the Virgin Mary (Christian)
1 November	All Saints Day (Christian)
25 December	Christmas (Public Holiday)(Christian)

Islamic Holidays

These holidays are based on the lunar calendar, so the actual day of celebration may vary. They include the following:

Korite/Eid al-Fitr	The feast occurs at the end of the fast of Ramadan or the 1st day of the month of Shawwal and lasts 3 days.
Tabaski/Eid al-Adha	The feast begins on the 10th of Zul-Hijjah and lasts 3 days. It commemorates Abraham's attempt to sacrifice his son.
Mulid al-Nabi	This day celebrates the birth of the Prophet Mohammed on the 12th of Rabia I.

APPENDIX E:
Language

French

Pronunciation of the French Alphabet

A *ah*	H *ahsh*	O *oa*	V *vay*
B *bay*	I *ee*	P *pay*	W *doobler vay*
C *say*	J *zhee*	Q *kew*	X *eex*
D *day*	K *kay*	R *ehr*	Y *ee grehk*
E *er*	L *ehl*	S *ehss*	Z *zehd*
F *ehf*	M *ehm*	T *tay*	
G *zhay*	N *ehn*	U *ew*	

Key Phrases

English	**French**	**Pronunciation**
Yes.	Oui.	wee
No.	Non.	nawng
Please.	S'il vous plait.	seel voo pleh
Thank you.	Merci	mehrsee
Thank you very much.	Merci beaucoup	mehrsee boakoo
You're welcome.	De rien, Je vous en pris	der reeyehn, zhe vooz ahn pree
Good morning.	Bonjour	bawngzhoor
Good afternoon.	Bonjour	bawngzhoor
Good evening.	Bonsoir	bawngsswahr
My name is...	Je m'appelle	zher mahpehl
Good night.	Bonne nuit	bon nwee
Good-bye.	Au revoir	oa rervwahr
I beg your pardon?	Pardon?	pahrdawng
Sir/Mr.	Monsier	Misyer
Mrs.	Madam	Mahdahm
Miss	Mademoiselle	Mahdamwazel
Sorry!	Desole(e)	dayzolay

English	French	Pronunciation
Where?	Ou?	oo
When?	Quand?	kahng
What?	Quoi?	kwah
How?	Comment?	kommahng
How much/many?	Combien?	kawngbyang
Who?	Qui?	kee
Why?	Pourquoi?	poorkwah
Which?	Lequel/Laquelle?	lerkehl/lahkehl
What does this mean?	Que veut dire ceci?	ker ver deer serlah
What does that mean?	Que veut dire cela?	ker vur deer serlah
Do you speak?	Parlez-vous?	pahrlay voo
Do you speak English?	Parlez-vouz anglais?	pahrlay voo ahnggleh
I understand.	Je comprends	zher kawngprahng
I don't understand.	Je ne comprends pas	zher ner kawngprahng pah
Do you understand?	Comprenez-vous	kawngprernay voo
Can you help me?	Pouvez-vous m'aider?	poovay voo mehday
Can I help you?	Puis-je vous aider?	pweezeh voo zehday
What do you want?	Que desirez-vous?	ker dayzeeray voo
Can you show me?	Pouvez-vous m'indiquer?	poovay voo mangdeekay
Can I have...?	Puis-je avoir?	pweezh ahvwahr
Can we have...?	Pouvons-nous avoir?	poovawng noo ahvwahr
I'm hungry.	J'ai faim	zhay fang
I'm thirsty.	J'ai soif	zhay swahf
I'm tired.	Je suis fatigue(e)	zher swee fahteegay
I'm lost.	Je me suis perdue(e)	zher mer swee pehrdew
It's urgent.	C'est urgent	seh tewrzhahng
Hurry up!	Depechez-vous	daypeyshay voo
Give me...	Donnez-moi	donnay mwah
Give it to me.	Donnez-le-moi	donnay ler mwah
Bring me...	Apportez-moi	ahportay mwah
Bring it to me.	Apportez-le moi	ahportay ler mwah
I'm looking for...	Je cherche	zher shehrsh
Show me.	Montrez-moi	mawngtray mwah
Show it to me.	Montrez-le moi	mawngtray ler mwah
Take me to...	Conduisez-moi	kawngdweezay mwah

English	French	Pronunciation
Stop!	Arretez-vous	ahrehtay-voo
Stop that man.	Arretez cet homme	ahrehtay seht ohm
Stop that woman.	Arretez cette femme	ahrehtay seht fahm
Stop thief!	Au voleur	oh volur

Vocabulary

English	French	Pronunciation
Arm	le bras	ler brah
Back	le dos	ler doa
Bandage	un bandage	ang bahngdahzh
Big	grand	grahng
Blanket	couverture	koovehrtewr
Boots	bottes	bot
Bridge	le pont	ler pawng
Building	le batiment	ler bahteemahng
Chest	la poitrine	lah pwahtreen
Cold	froid	frwah
Ear	l'oreille	lorehy
Early	tot	toa
Entrance	entree	entray
Exit	sortie	sorty
Eye(s)	l'oeil(les yeux)	lery (lay zyur)
Face	le visage	ler veezahzh
Far	loin	lwang
Fast	vite	veet
Finger	le doigt	ler dwah
Flashlight	une lampe de poche	ewn lahngp der posh
Foot	le pied	ler pyay
Gloves	des gants	day gahng
Hand	la main	lah mang
Harbor	le port	ler por
Hat	un chapeau	ang shahpoa
Head	la tete	lah teht
Heavy	lourd	loor
Hill	la colline	lah kolleen
Hospital	l'hopital	loapeetahl

English	French	Pronunciation
Hot	chaud	shoa
Jaw	la machoire	lah mahshwahr
Knee	le genou	ler zhernoo
Knife	un couteau	ang kootoa
Late	tard	tahr
Leg	la jambe	lah zhahngb
Light	leger	layzhay
Lung	le poumon	ler poomawng
Map	un carte	ewn kahrt
Market	le marche	ler mahrshay
Matches	des allumettes	day zahlewmeht
Medicine	la medecine	lah maydsseen
Mosque	une mosquee	ewn moskay
Mouth	la bouche	lah boosh
Near	pres	preh
Neck	le cou	ler koo
New	nouveau	noovoa
Nose	le nez	ler nay
Old	vieux	veeuh
Open	ouvert	oovehr
Police	police	poleess
Radio	un poste de radio	ang post der rahdyoa
Rib	la cote	lah koat
Right	juste	zhewst
River	le fleuve	ler flurv
Road	la route	lah root
Sea	la mer	lah mehr
Shoes	chaussures	shoassewr
Shoulder	l'epaule	laypoal
Shut	ferme	fehrmay
Slow	lent	lahng
Small	petit	pertee
Soap	du savon	dew sahvawng
Stomach	l'estomac	lehstomach
Thigh	la cuisse	lah kweess
Throat	la gorge	lah gorzh

English	French	Pronunciation
Toilet	toilette	twahleht
Tower	la tour	lah toor
Village	le village	ler veelahzh
Wall	le mur	ler mewr
Wrong	faux	foa

Military Vocabulary

English	French	Pronunciation
Aircraft	avion	ahveeyawng
Aircraft carrier	porte-avions	port-ahveeyawng
Air defense	defense aerienne	defawns aireeyen
Airfield	terrain d'aviation	terran d'ahveeyaseeyohn
Ammunition	munition	myuniseeyohn
Amphibious	amphibie	ahnfeebee
Antiair artillery	anti-aerien artillerie	ahntee-aireeyen artilayree
Antitank artillery	antichar artillerie	anteeshar artilayree
Army	armee de terre	armay de tayr
Artillery	artillerie	artilayree
Avaiation	aviation	ahveeyaseeyohn
Battalion	bataillon	bataleeyohn
Battleship	battaille navire	bataiye naveer
Bomb	bombe	baumb
Camouflage	camoufler	kamooflay
Chemical weapon	arme biologique	arm beeyolozheek
Coastal defense	defense cotiere	defawns koateeyayr
Corps	corps	koor
Cruiser (ship)	croisiere navire	kwaseeyayr naveer
Destroyer (ship)	contre-torpilleur	cohntra-torpeeyeur
Division	division	deevizeeyohn
Engineer	ingenieur	ahnzhainyeur
Garrison	garnison	garneezohn
Gun	canon	kanohn
Handgrenade	grenade a main	graynahd ah mahng
Headquarters	quartier general	kahrteeyay zhenairahl
Helicopter	helicoptere	heleekoptair

English	French	Pronunciation
Howitzer	obusier	ohbooseeyay
Infantry	infanterie	ahnfahntayree
Latitude	latitude	lahteetood
Longitude	longitude	lohnzheetood
Machinegun	mitrailleuse	meetrwayouz
Map	carte	kart
Military	militaire	meeleetayr
Mine	mine	meen
Minefield	champ de mines	shawng der meen
Mortar	mortier	moorteeyayr
Nuclear	charge nucleare	sharzh nookleeyayr
Radar	radar	rahdahr
Reconnaissance	reconnaissance	raikonaisahns
Rifle	fusil	fyoozee
Submachinegun	mitrailleur	meetraiyeur
Tank	char	shar
Tactics	tactique	takteek
Torpedo	torpille	torpeeye
Topography	topographie	topografeek
Weapon	arme	ahrm
Weather	temps	tahns

Ranks

English	French	Pronunciation
Sergeant	sergent	sayrzhawng
Second Lieutenant	sous-lieutenant	soo lootehnawng
First Lieutenant	lieutenant	lootehnawng
Captain	capitaine	kapeeten
Major	commandant	comahndawng
Lieutenant Commander	capitain de corvette	kapeeten der korveht
Lieutenant Colonel	lieutenant colonel	lootehnawng kulonehl
Commander	capitaine de fregate	kapeeten der fraygaht
Colonel	colonel	kulonehl
Captain	capitaine de vaisseau	kapeeten der vayzoah
Brigadier General	general de brigade	zhaynayrahl der breegahd

English	French	Pronunciation
Rear Admiral	general de division	zhaynayrahl der deeveezeeyohn
Vice Admiral	vice-amiral	vees-ahmeerahl
Lieutenant General	general de corps	zhaynayrahl der koor
General	general d'armee	zhaynayrahl d'ahrmay
Admiral	amiral	ahmeerahl

Wolof

Greetings

English	Wolof
Peace be with you (Hello).	Assalamou aleikoum.
And peace with you.	Wa aleikoum salam.
Goodbye.	Mangui dem.
Good morning.	Jama nga fanaan.
Good night.	Fanaanal ag jamm.
How are you?	Nanga def?

Phrases

English	Wolof
Can you help me?	Men nga ma dinbale?
Do you speak English?	Degg nga Angale?
Get up!	Jóg!
Go away!	Joge fi!
Help!	Ndimbal!
How are you doing?	Na nga def?
How far?	Soreena?
How many?	Jolu?
Hurry!	Gaawantu!
Lie down.	Laa.
Please/Excuse me.	Baal ma.
Stop!	Sacc!
What is your name?	Nanga tudd?
What time is it?	Ba waxtu o jot?
Where do you come from?	Fan nga joge?

English	Wolof
Where is ... ?	Ana ... ?
Where is the nearest latrine?	Ana wanag bi gen jage?

Vocabulary

English	Wolof
Beach	tefes
Beer	beer
Big/Little	réy/sew, tutti
Boots	maal
Bread	mbuuru
Can (n)	pot
Cap	mbaxana
Car	Oto/woto
Child	doom, guné/gone, xalel
Clothes	yéré
Coastal village	teeru
Coat	palto
Coffee	kafe
Cold	liw
Cup	pot
Day	bés, fan
Doctor	doctor
Drink	naan
Eat	kojomtu, lumpa
English	Angale
Family	njaboot
Far	sore/sori
Farmer	bëykat
Fish (n)	jën, këccax, ndawal, ngot, yaax
Fisherman	cubalo, móol
Food	cin, ñam
Forest	aala
Fork	furset

English	Wolof
Fruit	koóni
Good/Bad	neex/mbon
Green	werta
Hat	mbaxana
Here/There	fii/fa
Hill	tunda
Hot	taanga
House	neeg
Hour	waxtu, woxtu
How	naka
Knife	paaka
Later	Kanam
Man/Woman	goór/jigéen, soxna
Meat	ndawal, yaapa
Milk	biti
No	deédeét
Now	leégi
Ocean	geej
Oil	diw
OK	aka
Path	mbedda, yoon
Plate	asset
Please	ban, lel
Policeman	polis
Port	teeru
Potatoes	pompiteer
Red	xonxa
Rice	ceeb, maalo, sanxal
Right/Wrong	jub na/jubadi na
Right hand	ndeyjoor
River	dex
Road	mbedda, yoon
Rock	xeer/doj

English	Wolof
Sea	geej
Ship	gaal, saxaar
Shirt	mbudda, simis
Shoe	daala
Sleep	nelew
Soldier	soldaar
Sorry	maasa, mas
Soup	ñeex
Spoon	kuddu
Straight	taali
Student	jangakat
Sugar	sukkar/sukkur
Teacher	jangalekate
Thank you	jéréjëf
Tomorrow	ëllëk, saama, subba
Train (n)	otoraay, saxaar
Tree	garab
Up	kow/kaw
Vegetables	lëjum
Vehicle	moto, oto/woto
Village	dekka
Water	ndox
Week	bés bu ay
What	lan, naka
When	kanch
Where is	ana
Who	jumaa, kan?, ku!
Why	lutax?
Yes/No	Wao/Dedete
Yesterday	déemba

Relatives

English	**Wolof**
Aunt	tanta
Father	baay, laabe, paa, papa
Grandparent	maam
Mother	ndey, yaay
Relative	mbooka
Uncle	nijaay

Days of the Week

English	**Wolof**
Sunday	Alet/dimass
Monday	Altine/Lundi
Tuesday	Talaata
Wednesday	Aalarba/aaralba
Thursday	Alxemes
Friday	Aajuma/gaaw
Saturday	Aset, samdi

Numbers

1	benna
2	ñaar
3	nett
4	ñenent
5	juroóm
6	juroóm benn
7	juroóm ñaar
8	juroóm nett
9	juroóm ñenent
10	fukka
11	fukka ag benn
12	fukka ag ñaar
13	fukka ag nett
14	fukka ag ñenent
15	fukka ag juroóm
16	fukka ag juroóm benn
17	fukka ag juroóm ñaar
18	fukka ag juroóm nett
19	fukka ag juroóm ñenent
20	Ñaar fukka
30	fanweer
40	ñenent fukka
50	juroóm fukka
60	juroóm ben fukka
70	juroóm ñaar fukka
80	juroóm nett fukka
90	juroóm ñenent fukk
100	téeméer
1,000	njuné

APPENDIX F:
International Road Signs

Crossroads

Maximum speed

No through road

Road narrows

Fallen/falling rock

No entry for vehicular traffic

Motorway

Stop and give way

Low flying aircraft or sudden aircraft noise

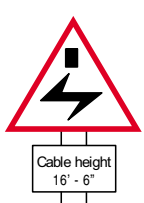
No left turn

One way street

Tourist information point

Traffic signals

No u-turn



Overhead cables, Maximum height

Failure of traffic light signals

Sharp deviation

APPENDIX G:
Deployed Personnel's Guide to Health Maintenance

DoD-prescribed immunizations and medications, including birth control pills, should be brought in sufficient quantity for deployment's duration.

Only food, water, and ice from approved U.S. military sources should be consumed. Consuming food or water from unapproved sources may cause illness. Food should be thoroughly cooked and served hot.

Thorough hand-washing before eating and after using the latrine is highly recommended, as is regular bathing. Feet should be kept dry and treated with antifungal powder. Socks and underwear should be changed daily; underwear should fit loosely and be made of cotton fiber.

Excessive heat and sunlight exposure should be minimized. Maintaining hydration is important, as are following work-rest cycles and wearing uniforms properly. Sunglasses, sunscreen (SPF 15 or higher), and lip balm are recommended. Drinking alcohol should be avoided. Personnel with previous heat injuries should be closely monitored.

Uniforms should be worn properly (blouse boots). DEET should be applied to exposed skin and uniforms treated with permethrin; permethrin is not intended for use on skin. Proper treatment and wear of uniform, plus application of DEET to exposed skin, decreases the risk of diseases transmitted by biting insects.

Overcrowded living areas should be avoided. Ventilated living areas and avoiding coughing or sneezing toward others will reduce colds and other respiratory infections. Cots or sleeping bags should be arranged "head to toe" to avoid the face-to-face contact that spreads germs.

Contact with animals is not recommended. Animals should not be kept as mascots. Cats, dogs, and other animals can transmit disease. Food should not be kept in living areas as it attracts rodents and insects, and trash should be disposed of properly.

Hazardous snakes, plants, spiders, and other insects and arthropods such as scorpions, centipedes, ants, bees, wasps, and flies should be avoided. Those bitten or stung should contact U.S. medical personnel.

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

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

Additional Information

Water

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

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

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

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

Rodents

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

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

Insects

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

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

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

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

DoD-approved insect repellents are:

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

Hot Weather

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

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

Sunscreens:

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

WORK/REST TABLE

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

The work/rest times and fluid replacement volumes will sustain performance and hydration for at least 4 hours of work in the specific heat category. Individual water needs will vary +/- (plus/minus) 1/4 qt/hr. NL = no limit to work time per hour. Rest means minimal physical activity (sitting or standing) and should be done in shade if possible. **Caution:** Hourly fluid intake should not exceed 1 ½ quarts. Daily intake should not exceed 12 quarts. Note: MOPP gear adds 10^{o} to WBGT Index.

Food

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

Human Waste

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

Cold Weather

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

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

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

First Aid

Basic Lifesaving

Those caring for injured persons should immediately:

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

Injuries and Care

Shock

- Symptoms:
  - Confusion
  - Cold, clammy skin
  - Sweating
  - Shallow, labored, and rapid breathing
  - Rapid pulse
- Treatment:
  - An open airway should be maintained.
  - Unconscious victims should be placed on their side.
  - Victims should be kept calm, warm, and comfortable.
  - Lower extremities should be elevated.
  - Medical attention should be sought as soon as possible.

Abdominal Wound

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

Bleeding

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

Eye Injury

Treatment:

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

Chest Wound

Symptoms:

- Sucking noise from chest
- Frothy red blood from wound

Treatment:

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

Fractures

Symptoms:

- Deformity, bruising
- Tenderness
- Swelling and discoloration

Treatment:

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

Spinal, Neck, Head Injury

Symptoms:

- Lack of feeling and/or control below neck

Treatment:

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

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

Heat Injuries

Heat Cramps

Symptoms:

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

Heat Exhaustion

Symptoms:

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

Heat Stroke

Symptoms:

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

Treatment:

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

Burns

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

Thermal/First Degree

Symptoms:

- Skin reddens
- Painful

Treatment:

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

Thermal/Second Degree

Symptoms:

- Skin reddens and blisters
- Very painful

Treatment:

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

Thermal/Third Degree

Symptoms:

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

Treatment:

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

Electrical Burns

Treatment:

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

Chemical Burns

Treatment:

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

Cold Injuries

Hypothermia

Symptoms:

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

Treatment:

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

Frostbite

Symptoms:

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

Treatment:

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

Emergency Life-Saving Equipment

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

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

APPENDIX H:
Individual Protective Measures

Security Threats

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

Foreign Intelligence and Security Services

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

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

In your personal contacts, follow these guidelines:

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

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

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

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

Detention

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

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

Foreign Terrorist Threat

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

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

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

To realistically evaluate your individual security program, you must understand how terrorists select and identify their victims. Terrorists generally classify targets in terms of accessibility, vulnerability, and political worth (symbolic nature). These perceptions may not be based on the person's actual position, but rather the image of wealth or importance they represent to the public. For each potential target, a risk versus gain assessment is conducted to determine if a terrorist can victimize a target without ramifications to the terrorist organization. It is during this

phase that the terrorist determines if a target is "hard or soft." A hard target is someone who is aware of the threat of terrorism and adjusts his personal habits accordingly. Soft targets are oblivious to the threat and their surroundings, making an easy target.

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

Travel Security

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

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

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

  NOTE: Current USMC policy requires service members to wear two I.D. tags with metal necklaces when on official business. Also, the current I.D. card must be in possession at all times. These requirements include travel to or through terrorist areas. In view of these requirements, the service member must be prepared to remove and

conceal these and any other items which would identify them as military personnel in the event of a skyjacking.

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

Hostage Situation

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

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

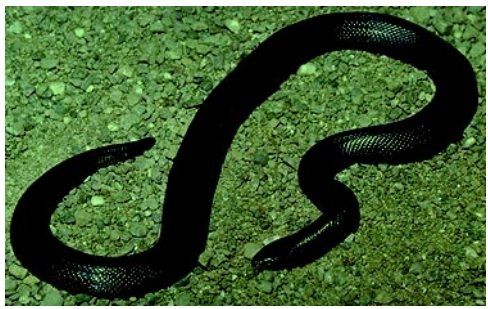
During interaction with captors, maintaining self respect and dignity can be keys to retaining status as a human being in the captor's eyes. Complying with instructions, avoiding provocative conversations (political,

religious, etc.), and establishing a positive relationship will increase survivability. Being polite and freely discussing insignificant and nonessential matters can reinforce this relationship. Under no circumstance should classified information be divulged. If forced to present terrorist demands to the media, make it clear that the demands are those of the captor and that the plea is not made on your behalf. You must remember that you are an American service member; conduct yourself with dignity and honor while maintaining your bearing.

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

APPENDIX I:
Dangerous Animals and Plants

Burrowing Asp



Description:

Adult length is usually less than a meter; relatively slender snake. Background varies; usually uniform dark purple-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.

Boomslang

Description:

Adult length usually from 1.2 to 1.5 meters (3 to 5 feet); relatively slender. Background varies from black to almost uniform green; no blotches or distinct spots. Short, stubby head and large emerald eyes. Scales strongly keeled and overlapping.

Habitat:

Most commonly found in dry woodland, thorn scrub, savannahs, and swamps bordering or close to streams, rivers, and lakes. Not found in rain forest regions or true desert.

Activity and behavioral patterns:

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

Venom's effects:

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

Black Mamba

Description:

Adult length usually from 2.5 to 3 meters (8-10 feet); maximum of 4.3 meters (14 feet); relatively slender snake. Background color may be

brown, olive brown, dark olive, greenish brown or dark blackish gray. Interior of mouth blue-gray to blackish.

Habitat:

Dry, open woodland and scrub land, especially in area of rocky outcroppings, but not in rain forest or desert. Also found in abandoned termite mounds and mammal burrows. Generally found below 1,500 meters (4,920 feet) elevation.

Activity and behavioral patterns:

Essentially terrestrial, but climbs trees in search of prey or shelter. Generally elusive; flees at the first sign of danger. When threatened, raises forepart of body from ground and spreads narrow hood. However, if intruder does not move, it will soon drop to the ground and seek cover. Ready to attack if disturbed or molested; particularly irritable during mating season (spring or early summer). It is a fast-moving snake.

Venom's effects:

Most feared African snake; few people survive its bite unless antivenin administered promptly. Venom very potent neurotoxin.

Western Green Mamba

Description:

Adult length is usually from 1.8 to 2 meters; relatively slender, with narrow head. Background usually bright green to yellowish green; scales edged with black.

Habitat:

Found in coastal rain forests and isolated patches of thick vegetation.

Activity and behavioral patterns:

Mainly arboreal, but quite often descends to ground if disturbed. In defense, spreads hood or inflates throat.

Venom's effects:

Venom primarily neurotoxic.

African Garter Snake

Description:

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

Habitat:

Generally found in coastal forests, high grasslands, or arid savannas.

Activity and behavioral patterns:

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

Venom's effects:

Venom likely neurotoxic. Not considered lethal to man.

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 on nerves controlling respiratory muscles. Untreated cases may culminate in respiratory failure and death.

White-lipped or Forest Cobra

Description:

Adult length usually 1.5 to 2 meters, maximum of 2.7 meters; relatively slender snake. Background color usually glossy black, dark gray or dark brown dorsal area; belly creamy white to yellow, often with darker blotches.

Habitat:

Found in tropical rain forests and subtropical forests; usually near water.

Activity and behavioral patterns:

Active snake that climbs and swims well. Nocturnal but may forage on overcast days. Adept in trees, on the ground, or in water. When dis-

turbed, can rear to a great height; usually more than two-thirds of body raises from ground. Spreads narrow hood.

Venom's effects:

Bites reported, venom highly neurotoxic; fatalities recorded.

Black-necked Spitting Cobra

Description:

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

Habitat:

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

Activity and behavioral patterns:

Generally nocturnal, although juveniles active during day. Although terrestrial and fairly aquatic, good climber. Inoffensive, will usually take off if disturbed. When provoked, raises up, spreads hood, and may spit at intruder's face.

Venom's effects:

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

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

Habitat:

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

Activity and behavioral patterns:

Diurnal and nocturnal; known to bask in early mornings or late afternoons. Comparatively slow-moving and sluggish; relies on immobility and camouflage to escape detection. When disturbed it makes a long, deep hissing noise and may lash out viciously.

Venom's effects:

Many serious bites reported; few 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.

West African Night Adder

Description:

Adult length usually about 0.5 meters. Background generally grayish, brownish, or olive green with darkish rhomboidal marks along dorsum. Top of head and neck have large, dark-edged V-shaped mark.

Habitat:

Savanna and forest clearings.

Activity and behavioral patterns:

When threatened, inflates body and hisses in defense.

Venom's effects:

Bites generally cause only pain, limited local swelling, and painful regional lymphadenophy. No fatalities reported.

White-bellied Carpet Viper

Description:

Adult length usually from 0.3 to 0.7 meters; fairly stout snake. Background variable, usually brown, gray, or reddish; may have series of oblique pale crossbars, interspersed with dark spaces, along back. Usually has row of triangular or circular markings with pale or white edging along each side. Belly pure white. Head pear-shaped; top covered with small scales.

Habitat:

Arid savanna, semidesert, and well-vegetated wadis. Not in true desert, but occurs on desert's edge, oases, and elevated vegetated areas within deserts.

Activity and behavioral patterns:

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

Little known of composition or toxicity of venom. May be similar to that of west African carpet viper, the venom of which is fairly potent. Symptomatology likely similar to that of other African carpet vipers including local swelling, incoagulable blood, and spontaneous bleeding in severe cases. Venom of carpet vipers generally slow-acting.

West African Carpet Viper

Description:

Adult length usually from 0.3 to 0.5 meter (1 to 1.5 feet). Background usually brown or gray or shades in between. Generally two conspicuous dorsal patterns: series of dark irregular crossbars on lighter background or series of pale saddles with darker background, lighter on sides. Most have characteristic line of small white "eye-spots" along flanks. Belly pale, usually with brown or reddish spots. Head pear-shaped; top cov-

ered with small scales. Tail short. Scales rough and heavily keeled, giving impression of fine ridges running length of body.

Habitat:

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

Activity and behavioral patterns:

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

Arthropods

Scorpions

Although scorpions in the region are capable of inflicting a painful sting, only the Fat-tailed and Australian scorpions in Senegal are known to be life-threatening.

Fat-tailed Scorpion

Habitat:

Found in dry and desert areas, usually in stony soils, cactus hedges and arid mountainous regions and high plateaux. Also

found on steep slopes of drifting sand dunes. Avoids humidity. Often found hear human habitations (such as in cracks in walls).

Venom's effects:

One of the most potent scorpion venoms in the world. Species causes several deaths each year.

Spiders

Although there are several spider species found in the region that are capable of inflicting a painful bite, 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 two weeks. The substance is extremely irritating if it gets into the eyes; temporary blindness has been reported.

Centipedes

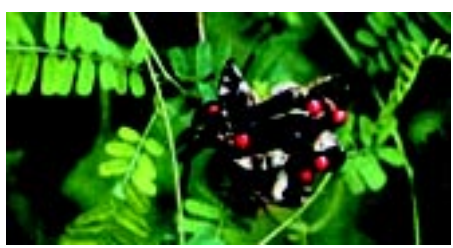
Although area centipedes are capable of inflicting a painful bite, none are known to be life-threatening.

Millipedes

Millipedes do not bite and in general are harmless to humans. However, when handled, some larger millipedes (may be more than 50 millimeters long) secrete a very noxious fluid that can cause severe blistering upon contact; some can squirt this fluid at least 2 feet.

Plants

Rosary Pea



Other names:

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

Mechanisms of toxicity:

Contains several indole alkaloids such as abrine and abrin (a toxalbumin), which can kill. The unchewed seeds are impervious and will pass through the GI tract without harm. Seeds are attractive and frequently used to make rosaries, necklaces, etc. Poison can be absorbed through breaks in the skin if integrity of the hull is compromised; for example, while stringing beads for a necklace.

Onset of toxicity usually in one to three days. Rosary pea is documented to have a quickly fatal potential (neurotoxin and hemocoagulant), having killed a child who thoroughly chewed one seed. Dermatitis may also occur from wearing a necklace of stringed beads.

Comments:

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

Crownflower

Other Name:

Milkweed

Mechanisms of toxicity:

Sap has extremely irritant effect on the eyes; also causes an allergic type contact vesicant skin reaction. The active principles include calcium oxalate, a proteolytic enzyme, digitalis-like glycosides, and an unidentified allergen.

Comments:

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

Desert Rose

Other names:

Monkey poison, mock azalea, impala lily.

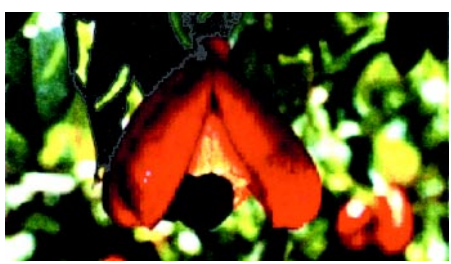
Mechanisms of toxicity:

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.

Ackee



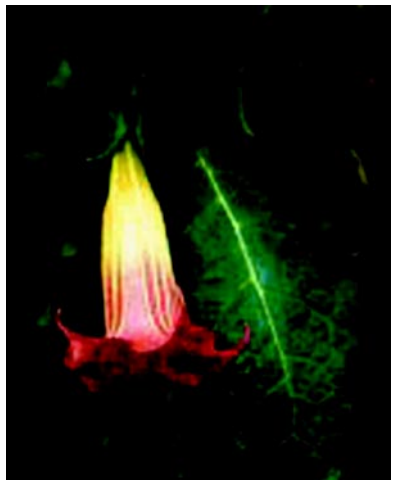
Mechanisms of toxicity:

Fruit wall, seeds and immature or spoiled white aril contain hypoglucin A (a water-soluble liver toxin). Inhibits gluconeogenesis. Death has resulted from severe hypoglycemia. Used as a fish poison.

Comments:

Has a tree which grows to 40 feet. Fruit consists of three black seeds imbedded in a white, waxy aril in a reddish pod. Sometimes grown for the mature edible fruit. Red fruit splits at maturity. Ripe fruits used for traditional cooking in Jamaica. Must be properly selected and prepared.

Angel's Trumpet



Mechanisms of toxicity:

Can kill. Tropane alkaloids are the toxic principle. People have been poisoned through consumption of crushed seeds accidentally included in flour.

Comments:

Used by Indians to worm hunting dogs, and as a plant to prevent insects from destroying other cultivated plants. Added to beer in west Africa to make the drink more potent.

Modikka

No Photograph Available

Mechanisms of toxicity:

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

Comments:

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

Rattlepod

Other names:

Rattlebox, rattleweed, chillagoe, horse poison.

Mechanisms of toxicity:

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

Comments:

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

Fool's Parsley

Mechanisms of toxicity:

All parts are toxic, possibly due to a cicutoxin-like substance and traces of coniine. Symptoms of toxicity include profuse salivation, diaphoresis, gastroenteritis, seizures, and coma. Children have died after mistaking plant for parsley and the rhizomes and roots for turnips or radishes.

Comments:

A carrot-like annual herb up to 2 feet high.

Croton

Other names:

Ciega-vista,
purging croton.

Mechanisms of toxicity:

Long-lasting vesicular dermatitis results from contact with the toxic resin. The cathartic and purgative properties of the toxins (croton oil, a phorbol, in leaves, stems, and seeds) causes severe gastroenteritis, even death; 20 drops potentially lethal (the oil applied externally will blister the skin). Many members covered with hundreds of sticky hairs that cling to the skin if contacted. Contact with the eyes can be very serious.

Comments:

Croton is a wooly-haired annual herb, evergreen bush, or small tree with smooth, ash-colored bark, yellow-green leaves, small flowers, and fruit.

Kamyuye

No Photograph Available

Mechanisms of toxicity:

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

Comments:

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

African Teak

Other names:

Osage Orange, fustic, bow wood.

Mechanisms of toxicity:

Benzophenones, xanthones, stilbenes, flavonoids, and tannins known to the genus. Has a milky, bitter sap; yields orange dye that causes dermatitis.

Comments:

12 species found in tropical America, South Africa, and Madagascar.

Jimsonweed

Other names:

Thorn-apple, stinkweed, Devil's trumpet.

Mechanisms of toxicity:

The entire plant is toxic because of tropane alkaloids. Fragrance from the flowers may cause respiratory irritation, and the sap can cause contact dermatitis. People have been poisoned through consumption of crushed seeds accidentally included in flour; also through attempting to experience the hallucinogenic "high." Jimsonweed has a quickly fatal potential.

Comments:

Originally called Jamestown weed after the mass poisoning of soldiers sent to quell Bacon's Rebellion in 1666, who ate the seeds during a severe food shortage. Often confused with Angel's Trumpet.

Bulb Yam

Other Name:

Air potato, wild yam

Mechanisms of Toxicity:

Bulb yam, air potato, and wild yam have tubers that contain diosgenin, a steroidal saponin, the alkaloid dioscorine, and a norditerpene lactone (diosbulbine). They and some other yams are poisonous when eaten raw. Causes gastroenteritis (nausea, bloody diarrhea). Some individuals eat them after special preparation. Has been used to commit murder.

Comments:

A prickly climber with a cluster of tubers just below the soil surface. Considered the chief "famine-food" of the tropical East. Poisonous unless properly prepared. Other species of this genus are good to eat with no special preparation, such as goa yam and buck yam.

Poisonvine

No Photograph Available

Other names:

Arrow poison plant.

Mechanisms of toxicity:

Seeds have digitalis-like toxin; used as arrow and spear poison in Africa.

Comments:

38 tropical species of shrubs. Monkeys have died from eating its leaves.

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. Has also caused chronic copper poisoning.

Comments:

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

Sasswood

No Photograph Available

Other names:

Ordealtree, mancona bark, ironwood, camel poison, black bean, Cooktown ironwood.

Mechanisms of toxicity:

Extremely poisonous; the two main species have similar toxicities. Alkaloids of esters and amides of cinnamic acid have been isolated. Most of the alkaloids are esters of diterpenoid carboxylic acids including cardiotoxic alkaloids. Powerful analgesic to the mucous membranes.

Comments:

Has been used as a fish poison.

Mole Plant

Other names:

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

Mechanisms of toxicity:

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

Comments:

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

Physic Nut

Other names:

Purging nut, pinon, tempate, Barbados nut.

Mechanisms of toxicity:

Quickly fatal potential. Fruit has two or three black, oily, pleasant tasting, poisonous seeds (also toxic roots and leaves) containing a plant lecithin (a toxalbumin called curcin) which, in contrast to many of the toxic lecithins, causes toxicity rapidly (has caused death — severe toxicity can follow ingestion of a single seed); also has intensely cathartic oils (some have used the oil for lamps, etc.); has caused fatal intoxication. Bark has been used as a fish poison. Also a skin irritant (hairs), as are all euphorbs.

Comments:

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

Velvet Bean

Other names:

Cowitch, cowhage, pica-pica, ox- or horse-eye bean.

Mechanisms of toxicity:

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

Comments:

Many species in its class; widely naturalized.

Swizzle Stick

No Photograph Available

Other names:

Boboro, dinque pinque, African rauwolphia.

Mechanisms of toxicity:

Potentially fatal systemic poison. Can cause dermatitis. Contains more than 40 indole alkaloids (yohimbine, reserpine, etc.), many of which are vasoactive. Can cause depression lasting months after withdrawal. Native to Central America, now widespread in many tropical regions. Several indole alkaloids. Known to cause death in Mexico.

Comments:

Usually a tree, growing to 45 feet. Rauwolphia is a shrub up to 9 feet.

Pokeweed

Other names:

Pokeberry, poke salet.

Mechanisms of toxicity:

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

Comments:

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

Panama Tree

Other names:

Castano, tartargum.

Mechanisms of toxicity:

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

Comments:

200 tropical species.

Yellow Heads

No Photograph Available

Other names:

Woolly-headed gnidia

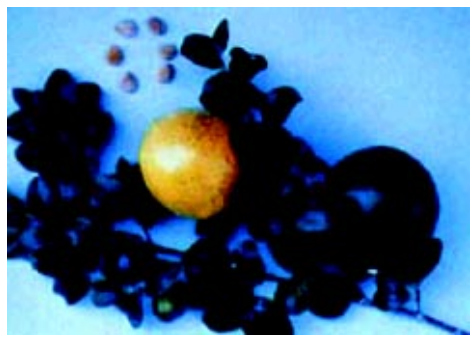
Mechanisms of toxicity:

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

Comments:

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

Strychnine



Other names:

Nuxvomica tree,
Snakewood tree

Mechanisms of toxicity:

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

Comments:

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

Nettle Tree

Other names:

Ortiga brava, pringamoza.

Mechanisms of toxicity:

Trees and shrubs with powerful stinging hairs. The intensity of sting delivered by these plants is species-variable. The bushy, tree-like varieties tend to be more irritating. Any contact between leaves or branches and skin can result in profound burning pain that can last for more than 24 hours. There is no permanent damage.

Comments:

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

APPENDIX J:
International Telephone Codes

International Telephone Codes

Algeria	213	Malta	356
Australia	61	Mexico	52
Austria	43	Morocco	212
Bahrain	973	Netherlands	31
Belgium	32	Nigeria	234
Brazil	55	New Zealand	64
Canada	1	Norway	47
China	86	Oman	968
Cyprus	357	Philippines	63
Denmark	45	Portugal	351
Djibouti	253	Qatar	974
Egypt	20	Republic of Korea	82
Ethiopia	251	Saudi Arabia	966
Finland	358	Senegal	221
France	33	Seychelles	248
Gabon	241	Singapore	65
Germany	49	Somalia	252
Greece	30	South Africa	27
Hawaii	1	Spain	34
Hong Kong	852	Sweden	46
Indonesia	62	Switzerland	41
Iran	98	Syria	963
Iraq	964	Taiwan	886
Ireland	353	Tanzania	255
Israel	972	Thailand	66
Ivory Coast	225	Tunisia	216
Japan	81	Turkey	90
Jordan	962	UAE	971
Kenya	254	United Kingdom	44
Kuwait	965	United States	1
Libya	218	Yemen	967
Madagascar	261	Zambia	260
Malaysia	60	Zimbabwe	263

AT&T (public phones)	0072-911 or 0030-911	On-base	550-HOME or 550-2USA

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