

## **Romania Country Handbook**

1. This handbook provides basic reference information on Romania, 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 Romania.
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 Romania.
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## KEY FACTS

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**Official Name.** Romania. The name means “Land of the Romans.”

**Capital.** Bucharest

**Country Code.** ROM

**National Flag.** Three equal, vertical bands of blue (hoist side), yellow, and red. The national coat-of-arms for Romania used to be centered in the yellow band but has been removed.

**Head of State.** President Ion Iliescu (20 December 2000)

**Time Zone.** UTC (formerly GMT) +2.

**Telephone Country Code.** 40

**Population.** 22,364,022

**Languages.** The official language is Romanian, however Hungarian and German is common.



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National Coat of Arms



National Flag

**Currency.** *Leu* (ROL). One *leu* equals 100 *Bani*.

**Exchange Rate.** US\$1 = ROL34,262 (January 2003)

**Calendar.** Gregorian. The fiscal year is the calendar year.

**Anthem.** *Awaken Thee, Romanian!*

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## U.S. MISSION

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### U.S. Embassy

The embassy compound is located near the center of the city of Bucharest on Strada Tudor Arghezi. The consular, press, and cultural sections are located one block away at the corner of Strada Batiste and Strada N. Filipescu (formerly Strada Snagov). The main chancery building houses the executive, political, economic, and commercial sections, the defense attaché office, and the administrative and security offices.

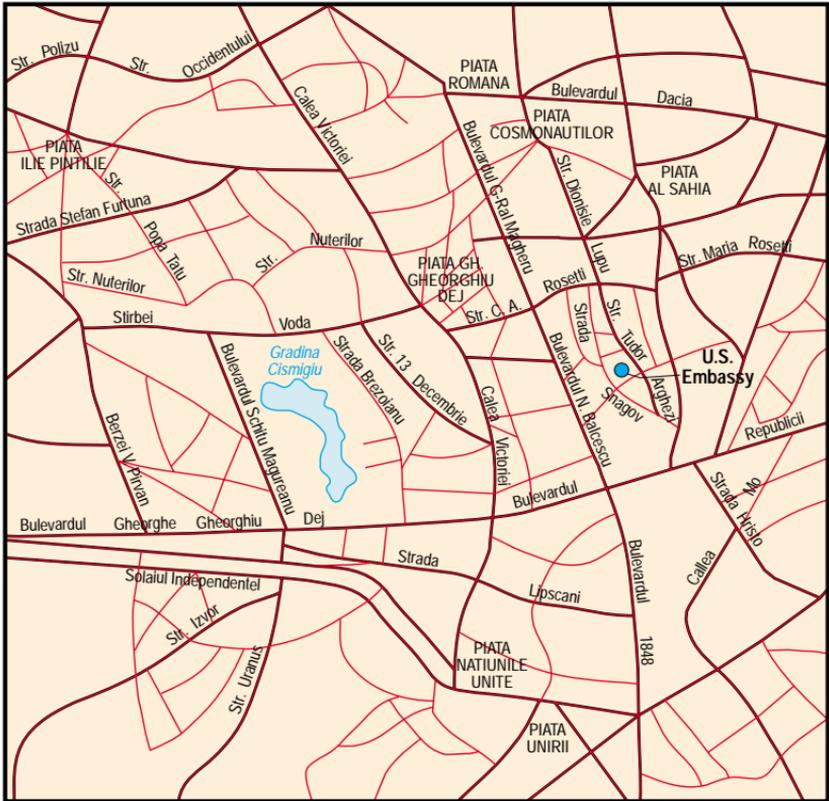
<b>Location.</b>	Strada Tudor Arghezi 7-9, Bucharest
<b>Mailing Address</b>	American Embassy Bucharest Department of State Washington, DC 20521-5260
<b>Embassy Telephone</b>	(40 21) 210-4042 or (40 21) 210-0149
<b>Embassy Fax</b>	(40 21) 210-0395
<b>Internet</b>	<a href="http://www.usembassy.ro">www.usembassy.ro</a>

### U. S. Consulate

<b>Location</b>	Strada N. Filipescu (formerly Strada Snagov) 26, Bucharest
<b>Mailing Address</b>	AmConGen (Buch) Unit 25402 APO AE 09213-5260
<b>Consular Telephone</b>	(40 21) 210-4042, (40 1) 210-6384
<b>Consular Fax</b>	(40 21) 211-3360



U.S. Embassy in Bucharest



## Downtown Bucharest

### Travel Advisories

There have been no urgent travel warnings issued by the U.S. Government for Romania. The Department of State issues travel advisories concerning serious health or security conditions that may affect American citizens. Advisories are available directly from the embassy. Those who plan to travel should leave a detailed itinerary with the embassy

staff. The embassy requires all official visitors to register in country so they can be contacted if necessary.

## **Entry Requirements**

### ***Passport/Visa Requirements***

Americans are required to have a valid passport for travel to Romania. For stays of up to 90 days, American citizens do not require a tourist visa. For stays longer than 90 days, visas may be obtained from a Romanian Embassy or Consulate in the United States or abroad. Visitors may extend visas at passport offices in Romania. For information regarding entry requirements and visas, contact the Romanian Embassy at 1607 23<sup>rd</sup> St. NW, Washington, DC 20008, telephone number (202) 232-4747, or the Romanian consulates in Los Angeles or New York City. Those with official or diplomatic passports must obtain visas for Romania and other Eastern European countries prior to traveling. All regulations concerning border crossings are subject to change and should be checked before traveling.

### ***Customs Restrictions***

Romanian customs officials may strictly enforce the temporary importation or exportation of firearms, medication, or antiques. Travelers cannot take more than US\$10,000 into or out of Romania. The personal effects of diplomatic personnel are exempt from customs inspections except when they are believed to contain forbidden items or goods subject to quarantine. Contact a Romanian or American embassy for a list of restricted items.

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## **GEOGRAPHY AND CLIMATE**

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### **Geography**

Romania is a Balkan country that is slightly smaller than the state of Oregon. It is located in Southeastern Europe, bordering the Black Sea between Bulgaria and Ukraine.

## ***Land Statistics***

<b>Total area</b>	237,500 square kilometers (91,699 square miles)		
<b>Land area</b>	230,340 square kilometers (88,934 square miles)		
<b>Water area</b>	7,160 square kilometers (2,764 square miles)		
<b>Natural Resources</b>	Crude oil (reserves are being exhausted), timber, natural gas, coal, iron ore, and salt.		
<b>Land Use</b>			
<i>Arable land</i>	41%	<i>Permanent crops</i>	3%
<i>Forest and woodland</i>	29%	<i>Other</i>	6%
<i>Meadows and pastures</i>	21%		

## ***Boundaries***

Romania shares its 2,508 kilometer (1,558 mile) border with the following countries: Bulgaria, 608 kilometers (378 miles); Hungary, 443 kilometers (275 miles); Moldova, 450 kilometers (280 miles); Serbia and Montene-



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**Plains in Romania**

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Europe

gro, 476 kilometers (296 miles); Northern Ukraine, 362 kilometers (225 miles); and Southeastern Ukraine, 169 kilometers (105 miles). Romania also has a 225 kilometer (140 mile) coastline along the Black Sea.

### ***Border Disputes***

Romania has had a border dispute with the Ukraine since 1995 over the Serpents Island, which lies in the Black Sea along Romania's maritime border with Ukraine. Both countries claim the island, but Ukraine has built installations, a wharf, and a power station there. Ukraine and Romania are pledging to resolve the border dispute.

### ***Bodies of Water/Drainage***

The longest river is the Danube, which flows for 1,075 kilometers (668 miles) through Romanian territory to the Black Sea. Most other rivers are tributaries of the Danube; the major tributaries are the Jiu, Olt, Arge, and Ialomia — all of which flow across the Walachian Plain. The Siret and the Prut flow from the northeast. The second longest river, the Mure, flows for 768 kilometers (477 miles) westward to



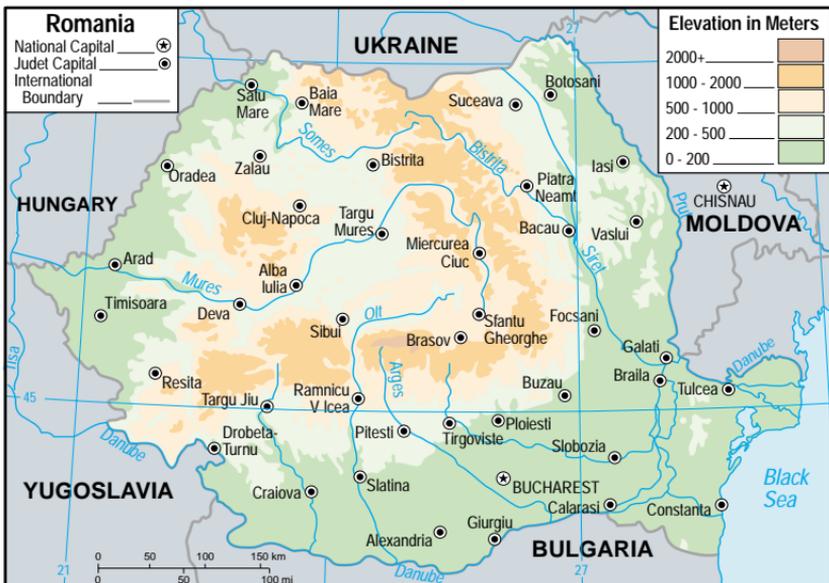
**Danube River**

join the Tisza River, a tributary of the Danube in Hungary. There are no significant lakes.

### Topography/Terrain

Romania is the third largest Central European country, after Russia and Ukraine. Mountains cover one third of the country. The main ranges are the Eastern and Southern Carpathians. Some peaks in the Eastern Carpathians reach more than 2,280 meters (7,480 feet) in height, while the Southern Carpathians reach 2,544 meters (8,346 feet) at the peak of Moldoveanu, the highest point in Romania. In the west there is a smaller area of mountains known as the Western Carpathians. They reach more than 1,800 meters (5,900 feet) in height.

Bordering the Carpathian ranges and accounting for another third of Romania are areas of hills and tablelands. To the east of the Eastern Car-

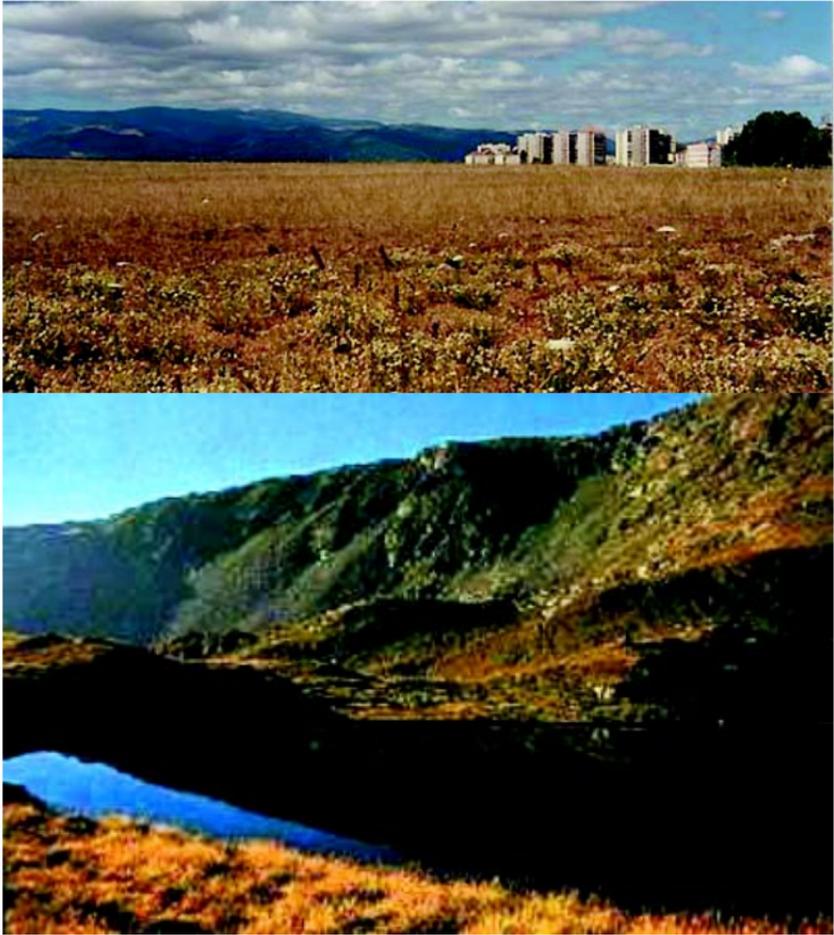


### Topography

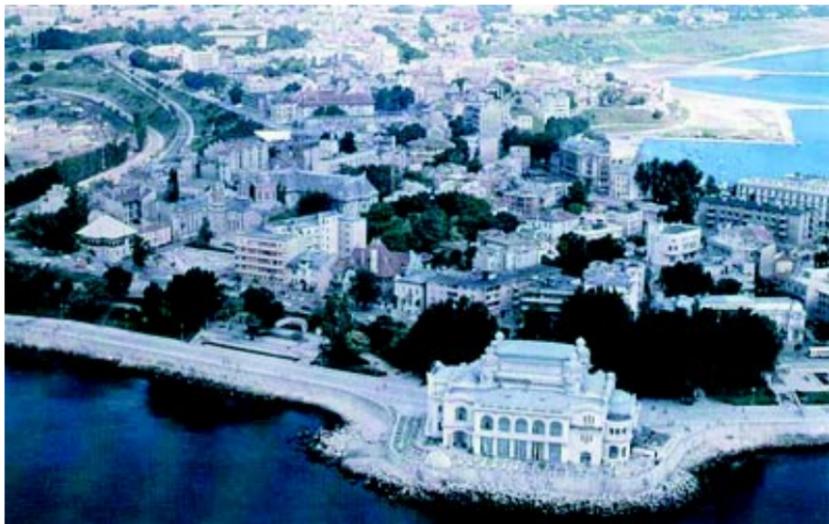


**Bicz Gorges in the Carpathian Mountains**

pathians there is the Moldovan Plateau, while to the west is the large Transylvanian Plateau. In the east the Dobrogea Plateau extends from the Danube River to the Black Sea.



Sibiu City, Plains, and Mountains (top) and Carpathian Peaks (bottom)



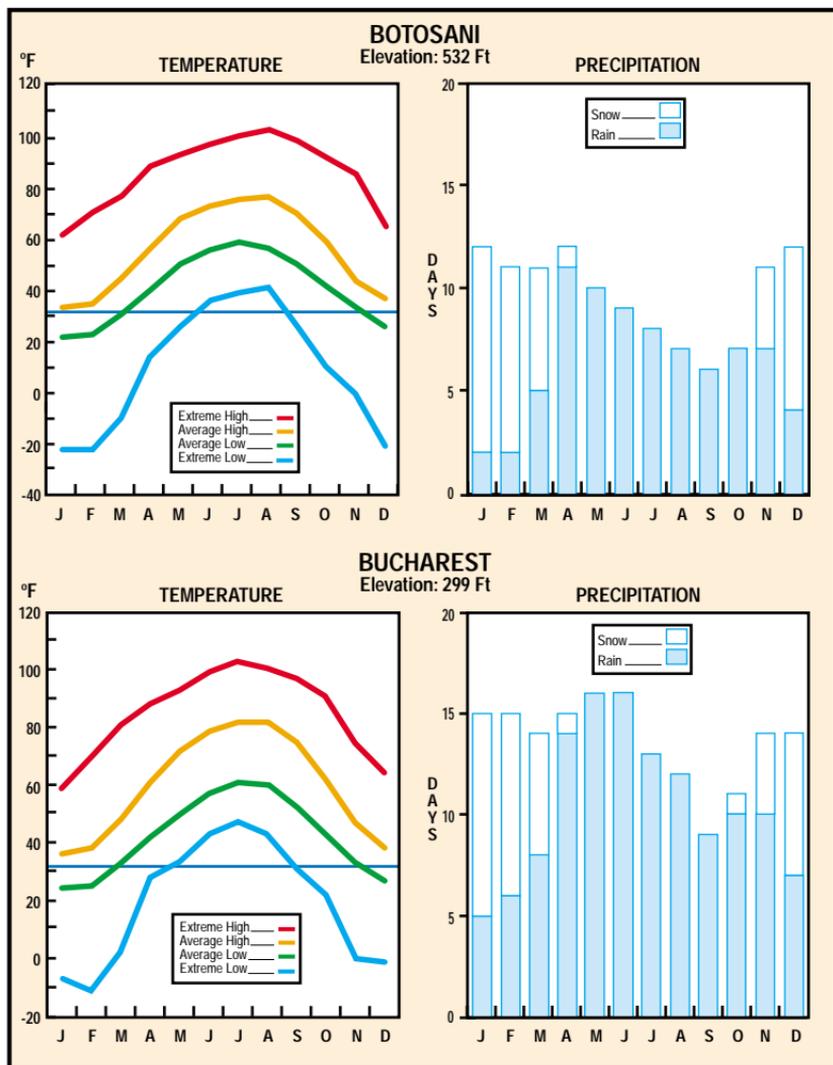
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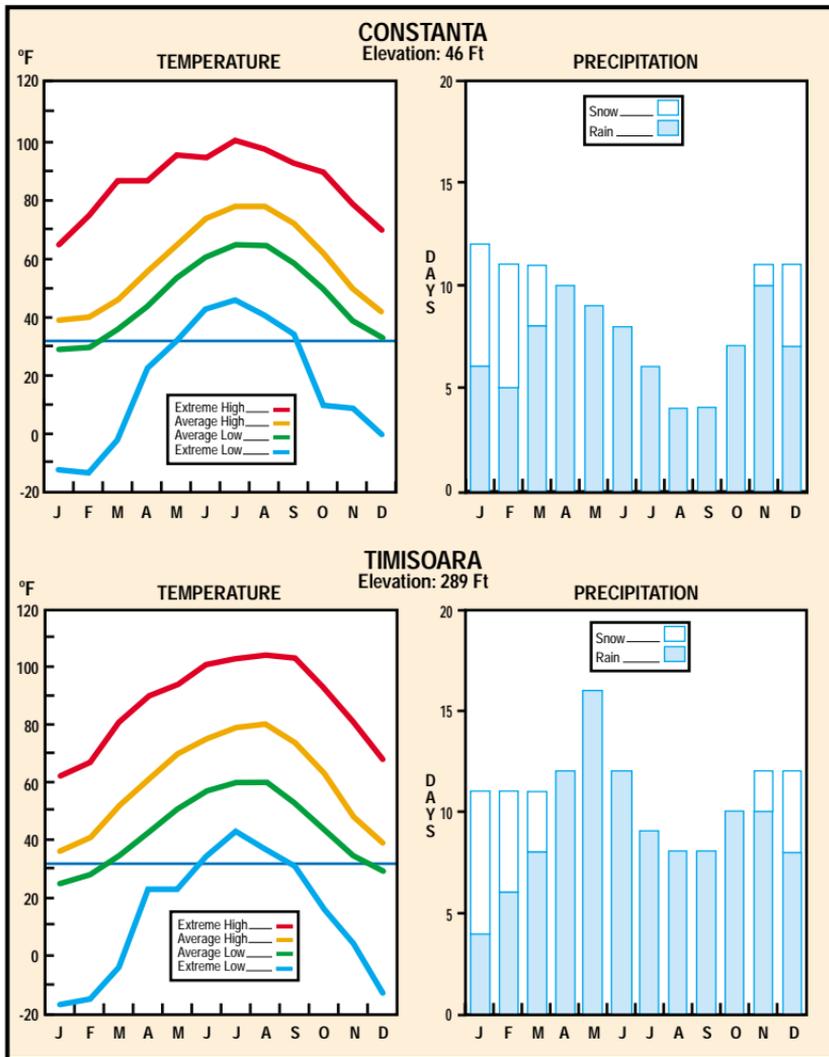
## The Black Sea Coast

The final third of the country is made up of fertile plains, Romania's most significant agricultural land. Irrigation is widely used in this region. To the south of the zone of foothills and plateaus lies the great Walachian Plain. In the west of the country the smaller Tisza River plain extends from the Western Carpathians to the Hungarian border. Another area of flatland is the Danube River delta, which is in an area of swamps, sand banks, and floating reed islands.

## Climate

Romania's location gives it a continental climate, particularly east of the Carpathians and south of the Transylvanian Alps and, to a lesser extent, in Transylvania, where the climate is more moderate. The climate is good for farming. Winters in the mountains are particularly severe. The principal seasons are autumn, winter, and summer, with a rapid transition from spring to summer. Winters are long and, at times, severe (December – March) with





Constanta and Timisoara Weather

frequent snow and fog. Summers (April – July) are hot, with frequent showers and thunderstorms. Autumns are prolonged (August – November). Temperatures are hot inland at sea level but moderate along the coast. In Bucharest, the daily minimum temperature in January averages  $-7^{\circ}\text{C}$  ( $20^{\circ}\text{F}$ ), and the daily maximum temperature in July averages  $29^{\circ}\text{C}$  ( $85^{\circ}\text{F}$ ). Light-weight clothing should be worn during the summers on the coast and in the low inland areas. Throughout the year and winter warmer clothing is needed in the uplands. Rainwear is suggested in the spring and fall. Precipitation varies by region with highest levels in the mountains; the Danube delta has the least rain. Average annual rainfall is about 650 millimeters (26 inches).

### ***Environment***

The soil of Romania varies greatly. The most fertile soil is the black earth of the plains, but much of the country is covered by brown forest soil of moderate fertility. The soils of the mountain and hill regions are the least fertile.

Romania has many mineral resources. Petroleum extraction began in the 1850s, and reserves are now either exhausted or negligible. Natural gas reserves are much larger. There are limited coal supplies, including hard coal and lignite.

Metallic minerals include copper, lead, zinc, bauxite, iron ore, chromium, manganese, and uranium. Gold, silver, and other rare metals are also found. Most of these deposits are sufficient for domestic requirements. The country does not have enough iron ore for its needs, however, and some must be imported.

Romania has frequent earthquakes; the most severe are in the south and southwest. In March 1977, Romania experienced an earthquake that registered 7.2 magnitude Richter-scale. In 1991, a 5.7 magnitude earthquake hit western Romania. Additionally, the country's geologic structure and climate promote landslides following heavy periods of rain. Flooding is common and often severe, particularly during spring thaw and summer thunderstorms.

Romania has several serious environmental problems, including air, water, and soil pollution, reflecting decades of industrial and economic growth with minimal effort to protect the environment. Moreover, the economic and political difficulties of the 1990s caused Romania to exploit natural resources.

About a fourth of the country is covered by forests, of which about 60 percent is in the mountains. Fir and spruce are the most common trees in the mountains, while the lower slopes have forests of deciduous trees, such as beech and oak. The plains and plateaus have grass vegetation with few trees. The Danube delta has vast areas of reeds and other aquatic plants.



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**Settlement in the Mountains**

## Cross Country Movement

During autumn and summer, cross-country movement is favorable in the plains and plateau regions, and on the roads. Winters are cold, with lasting cloudiness and fog affecting both land and air operations. The arc of the Carpathian Mountains extends 1,000 kilometers (621 miles) through the center of the country, covering 70,000 square kilometers (27,027 square miles.) The mountains are of low-to-medium altitude and are no wider than 100 kilometers (62 miles.) They are deeply fragmented by longitudinal and transverse valleys and crossed by several major rivers. These features, and the many summit passes, some at altitudes of 2,256 meters (7,402 feet), have made the Carpathians less of a barrier to movement than other European ranges. There are also many eroded platforms that provide plateaus at high altitudes.



## Land Use

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# TRANSPORTATION AND COMMUNICATION

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## Transportation

Romania's transportation network is extensive, encompassing road, rail, waterways, airports, and the sea. Many sectors are in need of repair and modernization.

### Roads

Romanian roads are generally in poor condition and underdeveloped by Western standards. The network totals 153,359 kilometers (95,292 miles): 103,671 kilometers (64,418 miles) are paved. Secondary roads become dirt tracks in many places, passable only by four-wheel-drive vehicles or



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## Transportation Network

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### Farm Road

horse-drawn carts. Agricultural vehicles use main roads. Many roads are unmarked and unlit. Traffic travels on the right.

One of the country's priorities is to improve the standards of national highways that are part of the Trans European Networks corridors. The plan consists of improving 1,000 kilometers (621 miles) of roads, including 250 kilometers (155 miles) of roads in Transylvania.

Rental cars are available in most cities. Several Western firms cater to business travelers, but charge more than some local companies. Taxi

drivers in Romania frequently attempt to overcharge foreigners. In Bucharest, personnel should hire cabs with a yellow pyramid on the roof. Bus service is inexpensive but slow. Schedules can vary weekly and the buses are in generally poor condition. Vehicle ownership is not widespread and hitchhiking is common.

Auto repair shops exist, but parts for makes other than Renault/Dacia or Citroen are scarce. Romania continues to produce and use leaded gasoline, though unleaded gas and diesel are available.

### ***Rail***

Romania has 11,367 kilometers (7,063 miles) of railway, made up of 10,860 kilometers (6,748 miles) of 1.435-meter standard gauge, 427 kilometers (265 miles) of narrow gauge, and 60 kilometers (37 miles) of broad-gauge track. Romania has approximately 3,888 kilometers (2,415 miles) of electric track and 3,060 kilometers (1,901 miles) of double track. The railway system is in need of repair and improvement.



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**Train Passes Through Rural Village**

Rail connections exist with all neighboring countries, with routes connecting to Munich, Vienna, and Warsaw. There are various types of train service, with different levels of speed and comfort. Service is inexpensive compared to Western Europe.

## ***Air***

Romania has 61 airfields, of which 24 have paved runways, and 37 unpaved. Romania's two largest airports are in the capital of Bucharest — Baneasa and Otopeni. Baneasa is the main domestic airport with connections to most Romanian cities. Otopeni is the main international airport. Most major Western and Central European carriers offer flights daily or weekly from their respective capitals. Romania's national airline is Taron Romanian Air Transport, which offers regular flights to points throughout Romania and to several foreign capitals. A visitor can travel from Bucharest to another major city in Romania for about US\$50.

### **Major Airfields**

<b>Airfield</b>	<b>Location</b>	<b>Runway l x w (m)</b>	<b>Elevation (m)</b>	<b>Capacity</b>
Arad	00-46-11N 000-21-26E	2,001 x 69	107	C-130
Baneasa	00-44-30N 000-26-06E	3,202 x 45	90	C-141B, C-130
Cataloi	00-45-04N 000-28-43E	2,011 x 30	61	C-130
Iasi	00-47-11N 000-27-27E	1,801 x 30	121	C-141B, C-130
Mihail	00-44-22N 00-0-28-29E	3,502 x 45	107	C-141B, C130
Otopeni	00-44-34N 000-26-05E	3,502 x 45	95	C-141B, C-5, C-17, C-130, KC-10/135
Vidrasau	00-46-28N 000-24-25E	2,001 x 30	293	C-141B, C-130

## ***Inland Waterways***

Romania's waterways extend across 1,724 kilometers (1,071 miles) and are navigable year round. A major artery for freight traffic is the Danube. Vessels also provide passenger service along the river, connecting inland areas that are poorly served by rail and roads.

Boats provide the only navigation through much of the Danube delta. Ferries operate year-round into Bulgaria and other areas. They are often in poor condition and many do not meet international safety standards. Other means are available, such as private motorboats, row boats and kayaks. Local fishermen and boatmen double as guides.

## ***Maritime***

Romania's largest port is Constanta, about 402 kilometers (250 miles) east of Bucharest on the Black Sea. The port can handle all types of cargo and has container, roll on/roll off, and ferry terminals. The port is



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**Ship on Danube River**

road and rail cleared and is suitable for strategic sealift operations. There is a vast amount of material handling equipment available, with portable jib cranes at almost every quay; container cranes in the container terminal; and reach stackers, forklifts, tractors, trailers, and bulk handlers at special handling berths. The port is undergoing a privatization process and private shipping lines or port companies now control most berths. The Japanese government and the European Bank for Reconstruction and Development have both offered loans to Romania that have been applied toward financing the new grain storage facilities. The European Investment Bank also loaned Romania US\$44 million to improve the port.

Most of Romania's ports are in need of substantial repair. Additional Black Sea ports include Galati, Mangalia, and Sulina. Romania also has several ports on the Danube River, including Giurgiu, Drobeta-Turnu, Turnu-Severin, and Braila. The Danube-Black Sea Canal, part of the Rhine-Main-Danube Canal provides a direct link between the Black Sea and the North Sea.

<b>Port</b>	<b>Location</b>	<b>Berths</b>	<b>Capacity</b>	<b>Anchor Depth (m)</b>	<b>Pier Depth (m)</b>
Constanta	00-44-10N 000-28-39E	137	All types	25-30	6.8-18.5
Braila	00-45-15N 000-27-59E	46	General cargo, bulk, POL	11-25	2.5-7
Galati	00-45-25N 000-28-05E	25	General cargo, roll on/roll off, bulk, lumber	8-20	6.5-7.5
Mangalia	00-43-49N 000-28-35E	2	General cargo	3-10	10
Sulina	00-45-09N 000-29-39E	5	General cargo	6-9	6-9

## ***Merchant Marine Force***

The Romanian Merchant Marine force has 241 ships of 1,000 gross registered tons or more. One ship is used for passenger-cargo, 167 for general cargo, 2 are container ships, 1 a rail-car carrier, 7 are roll-on/roll-off cargo ships, 14 are oil tankers, and 49 are bulk cargo ships.

## **Communication**

Romania has an outdated communications infrastructure that is gradually improving. The country is starting to use new technologies, such as cellular, satellite, and fiber-optics.

## ***Radio and Television***

Romania has 12 AM, 5 FM, and 13 television broadcast stations. Music Television (MTV), Euronews and Eurosport are some of the programming available in English. Numerous English-language films and American programming can also be found in their original language with Romanian subtitles. Romania has two public channels, TVR and TV2.

## ***Telephone***

Romania's telecommunications industry has historically provided poor service, but it is improving. The telecommunications monopoly, held by the state-run RomTelecom, was recently liberalized and privatized. This will allow competition for better service and lower prices. There are about 4 million telephone customers in Romania, which is half of all households in the country. Mobile telephone usage partially compensates for Romania's outdated telecommunications infrastructure. There are approximately 4.5 million cell phone subscribers in Romania, a number that now exceeds that of fixed-line subscribers. Only about 3 percent of people who live in rural areas own telephones.

## ***Newspapers/Magazines***

The Romanian constitution of 1991 abolished censorship, which enabled the press to flourish. The most popular newspapers in Romanian are *Libera* and the *Scanteia*. Foreign language publications are available in

Bucharest and other large cities. *Libera* publishes a weekly English language edition on Fridays. *Nine O'clock* is a free English newspaper that can be found in Bucharest. News stands and hotels typically offer *Newsweek*, *Time*, *Economist*, *International Herald Tribune*, *The Wall Street Journal*, and other international newspapers.

### ***Postal Service***

The postal service in Romania is often unreliable. Expect letters and postcards to take 4 to 6 days to reach Western Europe and 7 to 10 days to reach the United States. Post offices are usually open until 2000, Monday to Saturday. When mailing parcels out of the country, customers may have to pay an export duty of 20 percent of the parcels' value.

### ***Internet***

There are cyber-cafes located throughout Bucharest, many of which are open 24 hours. Seven percent of the population has personal computers at home. In Bucharest, 13 percent of the citizens have a computer.

### ***Satellites***

There is one satellite ground station using Intelsat, direct-dial exchanges operate in Bucharest. Romania is an active participant in several international telecommunication network projects.

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## **CULTURE**

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### **Population Statistics**

<b>Birth Rate</b>	10.8 births / 1,000 population
<b>Death Rate</b>	12.28 deaths / 1,000 population
<b>Population</b>	22,364,022
<i>0-14 years</i>	7.95 percent
<i>15-64 years</i>	68.51 percent
<i>65 years and older</i>	13.54 percent

## Ethnic Density

Romanians make up 89.1 percent of the population. There are many ethnic minorities, including Hungarians (8.9 percent of the population) and Germans (0.4 percent). The remaining 1.6 are Ukrainian, Serb, Croat, Russian, Turk, or Gypsy (also called Roma). The population of Romania is currently decreasing by 0.21 percent annually. Romania's significant Hungarian minority lives predominantly in Transylvania. There is frequent tension between the Romanian government and ethnic Hungarians, who have demanded more language rights and greater local autonomy.

Like many other countries in Central Europe, Romania has a difficult time counting the total Roma population, which could make up as much as 8 percent of the country. The Roma migrated from India to Southwest



## Population Density



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### Rural Romanian

Asia about a thousand years ago, and then from Southwest Asia to Europe in the 14<sup>th</sup> century. The Roma generally speak the Romany language, which has evolved and adapted local words over the years, but has its roots on the Indian Hindi and Punjabi languages. There are many dialects of Romani, many of which are not mutually intelligible. The Roma have often been persecuted in the past. During the Holocaust, the Nazis killed more than 1 million Roma. The Roma population is not well received in Romania and tends to live away from the general population. Younger generations try to fit in with Romanian society by giving up traditional dress and speech. This contributes to the difficulty in counting the Roma population.



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**Roma Family**

## **Society**

Romanian society is struggling to embrace the modern, democratic, and capitalist way of life. The joy and expectations of the post- Ceausescu era gave way to disillusionment in the 1990s, when the anticipated improvements in everyday life did not materialize. People living in the large urban areas continue to distrust the government and want greater economic and political freedoms. They seek to change traditional Romanian society to make it similar to other European societies. Others seek economic reforms without changing the government or traditional society. These conflicting attitudes have led to greater poverty, crime, instability, and a general rise in tensions between ethnic groups. However, with the recent invitation to NATO and negotiations initiated to



## Romanian Children

join EU, Romanians hope to become more a part of the West. More than half of the population lives in the cities, largely due to forced urbanization under Ceausescu. Romania's most populated city is Bucharest, with 2.4 million people.

## Education and Literacy Rates

Education is tuition-free and compulsory for those of ages 6 through 16. Children typically receive 11 years of schooling. Students then seek employment, enter vocational training, or prepare to enter a university. A recent report by the United Nations Educational, Scientific, and Cultural Organization shows that of all European countries, Romania allocates the lowest funds to education. The literacy rate in Romania is 98 percent.

## Language

The official language is Romanian. It is a Latin-based Romance language. Romanian was influenced by the Orthodox Church, which had imposed the Slavic language and Cyrillic alphabet on Romania for a time. There are dialects in Romanian, but they are so minimal that all speakers of Romanian are mutually understood. Ethnic Germans and Hungarians speak their native languages. The Roma speak Romany, an Indo-Aryan language. Many young people speak English, whereas many older people learned French as a second language. See Appendix L for some common words and phrases in Romanian.

## Religion

Nearly all Romanians are Christian. The predominant faith is Romanian Orthodox, which 70 percent of the population practices. Six percent of the population is Roman Catholic (of which 1 percent is Greek Catholic), 6 percent is Protestant, and 18 percent is unaffiliated or represents the small numbers of Muslims, Jews, and Christians of different denominations.

During the communist era, many of the churches were destroyed and religious organizations were persecuted. People in Romania are now free to practice any religion. Many government



**Orad Catholic Cathedral**

and public events held throughout the country begin with a religious service. Romanians are increasingly practicing religion; active membership is being reported strongest in rural areas.

## Recreation

Sports, especially soccer, are a favorite pastime in Romania. Men in Romania spend a great deal of time observing soccer matches. Romanians spend their free time watching television, going on walks, reading, swimming, skiing, aerobics, and going to movies.

Folk shows and dancing are also a popular part of social life in rural areas. Many people enjoy going to one of the 1,500 art museums throughout the country.



Romanian Soccer Fans

## Customs and Courtesies

### *Dress*

Romanians usually wear conservative clothing. Older women wear skirts and dresses while the younger women tend to wear slacks. Female office workers may also be found wearing tailored suits. Businessmen wear conservative suits. The younger males most commonly wear denim jeans, t-shirts, sport jackets, and other western-style clothing. Elderly people wear dark, conservative colors. People mourning the deaths of family members wear black clothes, from 6 weeks to a year.

### *Eating*

The Romanian diet is characterized by distinctive ethnic specialties such as *mititei* (grilled meatballs), *patricieni* (grilled sausage), and *mamaliga* (corn meal mush). Lunch is the main meal, usually consisting of soup, meat, potatoes, bread, and a vegetable. Pork is the preferred meat. Bread is typically eaten with every meal. Beer and wine are common beverages. In the past, food shortages were common; however, food is generally available now, but more expensive.

### *Gestures*

Good eye contact is considered a sign of honesty. It is impolite for someone to converse with their hands in their pockets or with chewing gum in their mouths. Men remove their hats before entering a buildings and churches, but not stores. Women cover their heads when entering a church.

### *Visiting*

Romanians enjoy getting together for holidays, anniversaries, birthdays, or just to socialize. Most social visits are arranged in advance. Guests often give an odd number of flowers when invited to someone's house, since even numbers are used for funerals. It is also customary to bring a small gift for hosts when visiting as well.

## ***Greetings***

Only between close friends or relatives are greetings made on a first-name basis; adults usually address younger children by their first names. One is expected to address a person by using his/her title (Doctor, Professor) before their surname. Greetings among adults usually consist of a handshake. Gentlemen used to kiss ladies' hands when greeting. Today, gentlemen shake ladies' hands and greet with *Săru Mână* (SEH-ru MIN-nah), which literally means "I kiss your hand." When greeting strangers, Romanians expect their greetings to be returned.



**Rural Romanian Family**

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## **MEDICAL ASSESSMENT**

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### **Infectious Disease Risks to Deployed Personnel**

Romania is assessed as an intermediate risk for infectious diseases, with an overall risk that will adversely impact mission effectiveness unless force health protection measures are implemented. Risk varies depending on location, individual exposure, and other factors.

### ***Foodborne and Waterborne Diseases***

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

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

Outbreaks of diarrhea are reported annually in major urban areas, with waterborne outbreaks frequently associated with the Danube River area. Diarrheal diseases can be expected to temporarily incapacitate a high percentage of personnel (potentially 11-50 percent per month) within days if local food, water, or ice is consumed. Hepatitis A can cause prolonged illness in a smaller percentage in the absence of countermeasures. In addition, viral gastroenteritis (for example, Norovirus) and food poisoning (for example, *Bacillus cereus*, *Clostridium perfringens*, *Staphylococcus* spp.) may cause significant outbreaks.

### ***Vector-borne Diseases***

During warmer months (typically April through October), ecological conditions in rural areas support arthropod vectors, including mosquitoes and ticks. A small number of personnel could contract symptomatic Lyme disease. Risk is lower for other vector-borne diseases such as tick-borne encephalitis (TBE) and Crimean-Congo hemorrhagic fever (CCHF), which cause more severe disease.

### ***Soil-contact Diseases***

Sporadic symptomatic cases of hantavirus could occur year round in personnel exposed to dust or aerosols in rodent-infested areas. Risk is highest in rural and semi-rural areas. This disease typically requires prolonged hospitalization, including intensive care. Fatalities may occur.

### ***Sexually Transmitted Diseases***

Sexually transmitted diseases, including gonorrhea, chlamydia, hepatitis B, and HIV are present in the country. Though the immediate impact of HIV/AIDS and hepatitis B on an operation is limited, the long-term health impact on individuals is substantial. A variety of other sexually transmitted diseases, including chancroid, herpes, syphilis, and venereal warts, are present, and may cause symptomatic infection.

### ***Water-contact Diseases***

Operations or activities that involve extensive freshwater contact may result in personnel being temporarily debilitated with leptospirosis. Concentrations of the leptospirosis organism in lakes, rivers, or other surface water may vary significantly from location to location. In addition, wading or swimming may result in exposures to enteric viruses, such as hepatitis A, via incidental ingestion of water. Prolonged water contact also may lead to the development of a variety of potentially debilitating skin conditions such as bacterial or fungal dermatitis.

### ***Respiratory-borne Diseases***

In the 2002 World Health Organization publication on Global Tuberculosis Control, annual incidence of active tuberculosis cases in 2000 was estimated at 100-300 per 100,000 (compared to the U.S. rate of 6 per 100,000). Prolonged contact with the local population may result in conversion rates to tuberculosis skin testing (TST) that may be elevated over the U.S. military baseline. In addition, deployed U.S. forces may be exposed to a wide variety of common respiratory infections in the local population. These include influenza, pertussis, viral upper respiratory infections, viral and bacterial pneumonia, and others. U.S. military populations living in close-quarter conditions are at risk for substantial person-to-person spread of respiratory pathogens. Influenza is of particular concern because of its ability to debilitate large numbers of unvaccinated personnel for several days.

### ***Animal-contact Diseases***

Sporadic symptomatic cases of anthrax could occur in the absence of countermeasures. Risk is present throughout Romania; personnel may be at risk through consumption of contaminated meat, or through contact with livestock. Personnel exposed to aerosols from animals or their environments, such as barns, could develop symptomatic Q fever. Infection can also be acquired through consumption of unpasteurized, contaminated milk products. Rabies also occurs countrywide; the primary risk of exposure to U.S. personnel comes from stray dogs.

## Medical Capabilities

Romania's ability to provide primary health care to the local population is minimal, and health care is below U.S. standards. Romania is rapidly upgrading its medical system to demonstrate its strong desire to join NATO and to establish stronger economic and political ties with Western Europe. Under communist rule, hospitals had deteriorated and equipment had become antiquated. An almost total absence of infection control programs resulted in high hospital-acquired infection rates. With the help of international assistance, this condition is improving. Some facilities have achieved near state-of-the-art capabilities in the past 5 years. However, most capabilities outside of Bucharest and other large cities remain inadequate, and equate to developing nation standards.

Romania has some shortages of pharmaceuticals, anesthetics, and other medications. Many facilities depend on international aid organizations and charities to fund facility refurbishment, major equipment purchases, and even routine operating expenses. Government funding is inadequate to cover the everyday expenditures needed to provide legally mandated free health services.

Blood supplies are of questionable quality. Romania has one of the highest HIV infection rates in Europe, and nearly half of the country's AIDS cases are pediatric, resulting from contaminated blood or medical instruments such as needles. Blood is tested for HIV, syphilis, and hepatitis B, but quality control is questionable, and poor blood-banking procedures may lead to cross contamination. Testing for other blood-borne pathogens is not universally performed. Poor oversight of blood processing laboratories and inadequate laboratory contamination-control procedures increase the probability of post-transfusion reactions.

Military health care is below U.S. standards. Military care in Constanta is markedly less capable than that available at the local civilian hospital. Shortages of supplies and medications are common, and sanitary and infection control procedures are well below Western standards. Coun-

trywide, civilians are frequently treated in military facilities if appropriate civilian capabilities are not available.

Military physicians are usually better trained than their civilian counterparts. In addition to their military duties, physicians may maintain private practices. Most physicians have at least a rudimentary knowledge of English. Military physicians are generally familiar with modern Western techniques, but lack of equipment prevents most of them from acquiring skills equivalent to their U.S. counterparts.

Little is known of Romania's combat casualty care. Physicians are generally competent, but combat medics' level of training may not meet Western standards. Capability to evacuate and treat casualties is likely limited by a lack of logistical support and a lack of dedicated air medical evacuation assets.

Romania's disaster and emergency response capabilities are limited, and large mass casualty situations would require assistance. The emergency telephone number (fire, ambulance, police) nationwide is 961. The operator likely speaks only Romanian.

Emergency services at most hospitals are poor. Response times for emergencies are slow, often 20 minutes or longer. Ambulance personnel are poorly trained, and most ambulances are poorly equipped. Constanta has a few modern advanced cardiac and trauma life support (ACLS/ATLS) capable ambulances, which are staffed by a physician, nurse, and driver. Helicopter evacuation is reportedly available in some areas.

## **Key Medical Facilities**

### **Fundeni Hospital**

<i>City</i>	Bucharest
<i>Location</i>	Strada Balotulni
<i>Coordinates</i>	44-27-52N 026-09-14E
<i>Type</i>	Civilian
<i>Beds</i>	2000

- Capabilities* Medical — hematology; surgical — cardiac, urology, radiology; ancillary — computed tomography (CT) scanner, ultrasound, laboratory, x-ray, blood bank.
- Comments* Best hospital in Romania. Army nuclear medical department collocated here. Staffing includes 300 physicians, 600 interns. Emergency generator. Unreliable water supply.

### **Burn Hospital**

#### **(Spitalul di Traumatologie Chirurgie Plastica si Reparatorie)**

- City* Bucharest
- Location* Strada Ion Mincu 7; off the Aviatorilor Statue
- Coordinates* 44-27-27N 026-04-47E
- Type* Civilian
- Capabilities* Burn facility, plastic surgery
- Comments* Open 24 hours. Quality of care below U.S. standards.

### **Emergency Hospital (Spitalul Clinic De Urgenta)**

- City* Bucharest
- Location* Intersection of Calea Floreasca Street and Soseaua Stefan Cei Mare
- Coordinates* 44-27-12N 026-05-51E
- Type* Government
- Beds* 650
- Capabilities* Emergency trauma, 10-bed cardiac care unit.
- Comments* Emergency trauma hospital. Ambulance service available. A helipad is being constructed on the roof of an addition, but it will have severe weight restrictions. No burn unit.

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## **HISTORY**

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The territory of modern Romania was settled before the 7th century BC by the Geto-Dacian peoples. The Greeks established trading colonies on the Black Sea coast, which, along with the rest of the Geto-Dacian territory, was occupied by the Romans until 271 AD.

Until the 10th century, invading Goths, Huns, Avars, Slavs, Bulgars, and Hungarians populated the area, but the indigenous Romanians survived in village communities and by the 10th century a feudal system had been established. From the 10th century, Hungary occupied Transylvania, which by the 13th century was an autonomous Hungarian region with a majority Romanian population.

The regions of Moldavia and Wallachia were also targeted for Hungarian expansion but were incorporated into the Ottoman Empire by the 15th century. In 1812, Russia seized an area of Moldavia from the Turks, but the remainder of Moldavia and Wallachia, with French assistance, united in 1859 under Alexandru Cuza, to form a national state, which bore the name Romania beginning in 1862.

Cuza abdicated in 1866 to be succeeded by King Carol I, who in 1877 declared independence from the Ottoman Empire and expanded Roma-



**Triumphal Arch in Bucharest**

nian territory by taking Dobruja in 1878. Aiming to further extend its boundaries, Romania entered WWI on the side of the Triple Entente (United Kingdom, France, and Russia). Immediate invasion by Austria-Hungary and Bulgaria followed; however, at the Versailles Peace Con-



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Bran Castle, also called Dracula's Castle

ference in 1919, Romania was awarded Transylvania and Bessarabia, bringing their ethnic Romanian populations within Romania's boundaries. During the inter-war years, King Carol II and his Foreign Minister Titulescu formed alliances with France, United Kingdom, and the Little Entente (Yugoslavia and Czechoslovakia), and signed a Balkan Pact with Turkey, Yugoslavia, and Greece. Relations were also established with the USSR. In 1938, King Carol II declared a personal dictatorship but was forced to abdicate in 1940 in favor of his son, Michael, while Ion Antonescu created a fascist dictatorship.

Romania supported Hitler's invasion of Yugoslavia and Russia in 1941, eventually sending two field armies to the Eastern front. The Ploesti oil refineries came under fierce aerial assault by Allied bombers several times during the war, which led to thousands of German anti-aircraft personnel being stationed in Romania to protect the oil fields.

By 1943, Soviet forces had gained superiority, and they started their drive west. Romanian attitude shifted, and as Soviet forces were about to invade, Romania capitulated and turned on the Germans. The pro-Soviet government of Radescu was replaced in 1946 by a new administration that was led by Petru Groza. This was a Communist government, which abolished the monarchy and proclaimed Romania as a People's Republic in 1947.

Throughout the late 1940s and 1950s, Romania adopted a neo-Stalinist style of government, rebuilding the economy and purging religious and political opponents. Romania joined the Warsaw Pact in 1955 and Soviet troops withdrew in 1958. After Gheorgiu-Dej's death in 1965, Nicolae Ceausescu took over leadership and pursued a policy of independence from Moscow. Under Ceausescu, Romania began to cultivate relations with Western states, in particular with the United States and the Federal Republic of Germany (West). Romania was able to receive a World Bank loan in 1974, because the Romanian economy was crumbling under Ceausescu's regime. A state of emergency was declared in the energy sector in 1985.



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### Ceausescu's Grave

In 1989, it appeared as if Romania might escape the effects of the revolutions sweeping across Eastern Europe. Ceausescu was bitterly opposed to the changes occurring in Poland and Czechoslovakia, but in December 1989 anti-government struggles in Bucharest and Timisoara developed into a brief civil war, ending with the capture, trial, and execution of the Ceausescus.

In the presidential vote, Ion Iliescu of the National Salvation Front (FSN), a former communist, won a majority of the vote and control of

the National Assembly and Senate. This did not halt the political unrest and violence, however, as many people believed the election results had been heavily influenced by voter coercion, reminiscent of the previous communist regime.

In 1990, the Securitate (secret police) was disbanded and replaced by the Romanian Intelligence Service (SRI). Public religious practices were allowed to resume, but there was still a significant amount of public discontent regarding the effects of the introduction of a market economy. A treaty in cooperation and good neighborliness was signed with the USSR in April 1991 in an attempt to restore relations with the former superpower, whose leadership had not intervened during the



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**Social Protesters March Against Communism**

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1989 revolution. By September, however, the newly elected government was in turmoil and Prime Minister Petr Roman resigned, following an outbreak of mass rioting.

Roman was succeeded by Theodor Stolojan, who headed a cross-party coalition government that endorsed Romania's new constitution in December 1991. President Iliescu was reelected in 1992. A political crisis in August 1993 led to a government re-shuffling in which four ministers and 15 state secretaries were removed from office. In 1993, Romania became a member of the European Council and the Partnership for Peace.

A new coalition government led by the Romanian Democratic Convention (CDR) was elected in 1996. The President, Emil Constantinescu, instituted economic reform and attempted to bring Romania closer to the West. Romania continues to be plagued by corruption and inefficiency in politics and economics. The CDR government was defeated in National Elections in 2000, when the country reelected Iliescu and the Social Democratic Party.

In 2001, parliament passed a plan to return private property that had been nationalized under Communism. Romania was formally invited to join NATO in November 2002. They are reorganizing their military structure to NATO standards to enable Romanian forces to participate in NATO exercises.

## **Chronology of Key Events**

- 900-1919 Hungary occupies Transylvania.
- 1400 Moldavia and Wallachia occupied by the Ottoman Turks.
- 1812 Part of Moldavia seized by Russia.
- 1859 Moldavia and Wallachia unite under Cuza.
- 1862 The state is named Romania.
- 1877 Romania declares independence from the Ottoman Empire.
- 1914 Start of World War I.
- 1916 Romania enters the war on the side of the Triple Entente.

- 1919 Transylvania and Bessarabia awarded to Romania.
- 1938 King Carol II declares a personal dictatorship.
- 1939 Start of World War II.
- 1940 Bessarabia occupied by USSR, Transylvania by Hungary, and Dobruja by Bulgaria; King Carol II abdicates and Antonescu establishes a fascist dictatorship.
- 1944 Romania supports USSR and expels all German troops.
- 1946-47 Groza comes to power and abolishes the monarchy.
- 1955 Romania joins the Warsaw Treaty Organization.
- 1958 All USSR troops leave Romania.
- 1965 Ceausescu comes to power.
- 1974 Romania receives World Bank loan.
- 1985 State of emergency declared in energy sector.
- 1989 Fall and execution of Ceausescu.
- 1990 National Salvation Front and Iliescu win 85% of vote.
- 1991 Cooperation Treaty signed with USSR.
- 1991 Premier Roman resigns, succeeded by Stolojan.
- 1992 President Iliescu reelected.
- 1993 Government crisis.
- 1993 IMF authorizes up to US\$700 million in aid.
- 1994 Romania officially becomes an associate member of the European Union.
- 1996 National elections held; Center-Right coalition wins, Constantinescu and Ciorbera come to power.
- 1997 Government announces economic reforms.
- 1998 Ciorbera replaced by Radu Vasile as Prime Minister.
- 1999 10,000 miners strike over economic reforms hurting the industry; security forces keep miners out of Bucharest.
- 2000 National elections held; Iliescu reelected as President, Leftist Adrian Nastase becomes Prime Minister.
- 2001 Land return laws passed by Parliament, returning property taken during Communism.
- 2002 Romania invited to join NATO.

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## GOVERNMENT AND POLITICS

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### Government

The Romanian government has made great strides with reform and capitalism, but still has major obstacles to overcome before becoming a full European partner. The country struggles with poverty, corruption, and incomplete economic reform. Many Romanians believe that acceptance into NATO will provide much needed relief. Romania received an offer for NATO membership in November 2002, which could provide additional momentum for internal reform. Romania may also join the European Union (EU) in the next decade.



Romanian Parliament

## ***National Government***

**Executive Branch.** The executive branch consists of a president, a prime minister, and the council of ministers. Under the constitution, the president of Romania serves as chief of state, commander-in-chief of the armed forces, and also the head of the Supreme Council of National Defense. The president can serve two, 4-year terms. The prime minister is appointed and can be removed by the president in consultation with the governing party or coalition in parliament. Within 10 days of his appointment, the prime minister submits a proposed list of ministers and legislative program to parliament, which then meets in a joint session to give a vote of confidence in the government. If at least two attempts have been made to receive a vote of confidence in a government, and there has been no government for at least 60 days, the president may dismiss parliament in consultation with the presidents of both houses. Also, the president may dismiss and appoint a nominated minister without requiring a renewed vote of confidence. The parliament may only express votes of confidence or no confidence in the government and its program as a whole.

**Legislative Branch.** Romania's bicameral parliament consists of an upper house or *Senat* and the Chamber of Deputies. The *Senat* consists of 140 seats. Members are elected by direct popular vote on a proportional representation basis to serve 4-year terms. The Chamber of Deputies has 345 seats. Both the *Senat* and the Chamber of Deputies must pass identical bills in order to enact laws. Members are elected by direct popular vote on a proportional representation basis to serve 4-year terms. The electoral system is based on proportional representation and parties must surpass a 3 percent threshold to gain representation. The legal voting age is 18.

**Judicial Branch.** Supreme Court of Justice, the highest body in the judicial system, is responsible for civil, criminal, military, and administrative activities. It is headed by the procurator-general who is responsible only to the Grand National Assembly. Under the Supreme Court are the Court

of Appeal, 41 departmental county courts, and lower courts. Court judges are appointed by the president from proposals made by the Higher Council of the Judiciary. The president of the Supreme Court is the senior judicial figure. The attorney general heads the Ministry of Justice. Judges are politically independent. Romania has a constitutional court. Military tribunals address internal and external security issues. The death penalty was abolished in December 1989, and is forbidden by the constitution.

### ***Local Government***

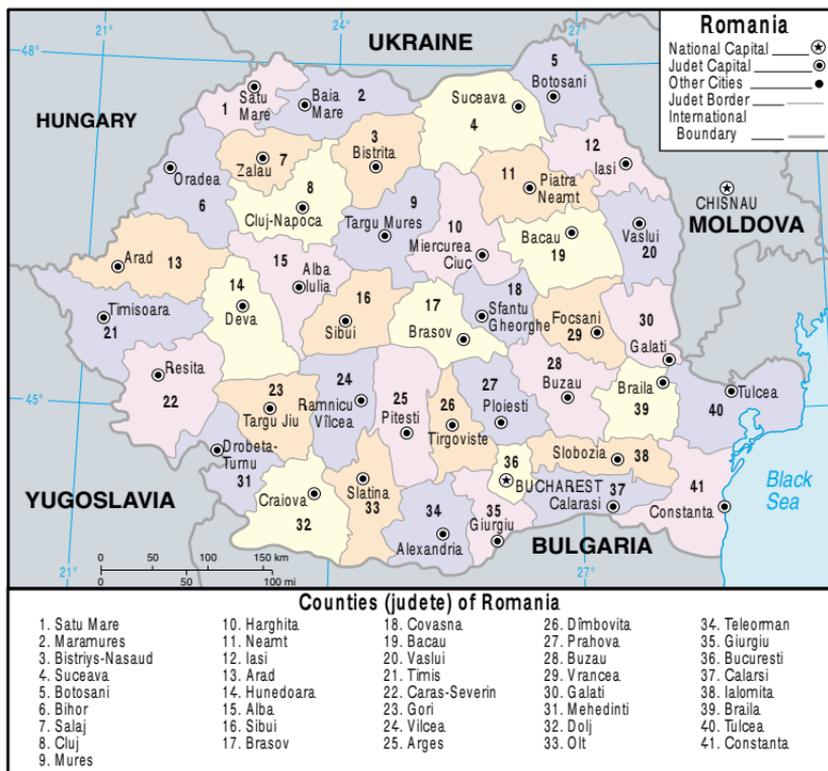
The local government structure in Romania has been in use for hundreds of years. There are two main tiers of local government. The *judetes* (counties) are the upper tier. There are 40 counties in Romania. The lower tier of local authority is made up of 2,800 *commune* (with populations up to 5,000), 280 *orase* (with populations between 5,000 and 20,000), and 86 *municipii* (larger cities with more than 20,000 people). Each unit of local government has its own administration, the right to own land, and some local ruling authority. Local government elections are held every 4 years.

### ***Human Rights***

Romania had been criticized for failing to uphold its human rights obligations, especially in cases involving the Roma minority, who were often subject to discrimination and violence. However, the current administration has greatly improved the treatment of all Romanian citizens, regardless of ethnic background.

### ***Key Government Officials***

<b>President</b>	Ion Iliescu
<b>Prime Minister</b>	Adrian Nastase
<b>Minister of Defense</b>	Ioan Mircea Pascu
<b>Minister of Foreign Affairs</b>	Micea Geoana
<b>Ambassador to the U.S.</b>	Bogdan Mazuru



## Administrative Judetes

## Politics

### Elections

The president is elected by popular vote for a 4-year term. The last election was held 26 November 2000, with runoff between the top two candidates held 10 December 2000. Deputies and senators are elected in a proportional representation system, with candidates appointed proportionally from party lists. They serve 4-year terms, and their



**President Iliescu (left) and Prime Minister Nastase (right)**

terms begin when the president convenes the first session of parliament. The number of seats in the lower and upper house is set by law (presently 345 and 140, respectively). Groups of national ethnic minorities are entitled to representation in Romania's parliament. If no party representing a given national ethnic minority receives any seats, then the leading party representing that minority is automatically given a seat in the Chamber of Deputies. Next elections are to be held November/December 2004.

The 2000 election yielded the following results:

<b>Senate</b>	<b>Seats</b>
Party of Social Democracy in Romania (PDSR)	65
Party of Great Romania (PRM)	37
Democratic Party (PD)	13
National Liberal Party (PNL)	13
Democratic Union of Hungarians in Romania (UDMR)	12

<b>Chamber of Deputies</b>	<b>Seats</b>
Party of Social Democracy in Romania (PDSR)	155
Party of Great Romania (PRM)	84
Democratic Party (PD)	31
National Liberal Party (PNL)	30
Democratic Union of Hungarians in Romania (UDMR)	27

### ***Political Parties***

Although there are approximately 30 active political parties in Romania, only 5 have the minimum 3 percent of the vote to represent government in the Senate. The PDSR recently merged with another smaller party and now goes by the name Social Democratic Party (PSD). In the 2000 elections, the PSD won 36.6 percent of the vote. The PSD is led by former communist leaders of Romania, and promises economic and financial reforms, as well as closer relations with the West through NATO membership and cooperation with the EU. The PRM, which gained 19 percent of the vote in 2000, is an opposition party to the PSD, and appeals to younger voters. It calls for more extreme measures to solve Romania's economic problems, and has used anti-Semitic and anti-Hungarian sentiment to arouse support. The PD is a socialist party that received 7 percent of the vote in 2000. The PNL is a moderate-liberal party that received 6.9 percent of the vote in 2000. It advocates intense political, economic, and legal reform in Romania. Representing the Hungarian minority in Romania is the UDMR, which received 6.8 percent of the vote in 2000. This party works for minority rights in Romania.

### ***Foreign Relations***

Since the end of the Cold War, Romania has pursued a policy of strengthening relations with the West, especially the United States and the European Union. Romania was cooperative with the international community in enforcing sanctions against the former Yugoslavia and gave the United States overflight rights during the Kosovo campaign.

Romania has been involved in several UN peacekeeping missions in Angola, Bosnia, and Albania.

Romania's relations with its neighbors are improving after years of tensions surrounding border disputes. Romania signed bilateral treaties with Hungary and Ukraine to resolve the conflicts and create the foundation for future constructive relations. Romania has a treaty of friendship, cooperation, and good neighbor-ship with Russia; economic ties with Russia are also strong.

Romania has been invited to join NATO.

### ***Treaties***

Romania is party to the following agreements, organizations, and treaties:

Council of Europe (CE)

European Union (EU, applicant)

Group of 9 (G-9)

Group of 77 (G-77)

International Atomic Energy Agency (IAEA)

International Criminal Police Organization (Interpol)

International Maritime Satellite Organization (Inmarsat)

International Monetary Fund (IMF)

International Olympic Committee (IOC)

Organization for Security and Co-operation in Europe  
(OSCE, formerly the CSCE)

Partnership for Peace (PfP)

United Nations (UN)

Western European Union (WEU, associate partner)

World Health Organization (WHO)

World Trade Organization (WTO)

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## ECONOMY

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### Statistics (2001)

#### GDP

*Purchasing power* US\$152.7 billion

*Growth rate* 4.8%

*Per capita* US\$6,800

**Inflation rate** 34.5%

**External debt** US\$11.6 billion

**Unemployment rate** 9.1%

**Exports** US\$11.5 billion

*Commodities* Textiles and footwear 26%, metals 15%,  
machinery and equipment 11%

*Partners* Italy 22%, Germany 16%, France 7%, Turkey  
6%, United Kingdom 5%

**Imports** US\$11.4 billion

*Commodities* Machinery and equipment 23%, fuels and min-  
erals 12%, chemicals 9%, textiles 19%

*Partners* Italy 19%, Germany 16%, Russia 9%, France  
7%, Turkey 6%, United Kingdom 5%

#### *Utilities*

Romania has a 22,180,000 kilowatt production capacity, and a 49.787 billion kilowatt-hour production.

#### **Outlook**

Romania has made progress at reforming government and returning freedoms to the people. The largest threat to Romania's government is corruption. It has permeated all levels of government, and makes accountability a problem. Working to join NATO and the EU will force

Romania to examine its weakest areas and address them in order to be compatible with the West.

Of all the former communist countries in Central Europe, Romania has had the hardest time with economic reform and modernization. One of the poorest countries in Europe, Romania began its transformation in 1989 with an outdated industrial base and inefficient domestic production. Over the past decade, economic restructuring with extensive financial assistance from international organizations has been largely unsuccessful in fully reviving the sluggish economy. Consequently, Romania still lags behind all other Central European countries. Since 2000, however, Prime Minister Nastase has made improvements that are bringing results. The country began emerging in 2000 from a harsh 3-year recession, thanks to strong demand in EU export markets. Inflation is down to about 34 percent, as opposed to the 50 percent levels in the late 1990s. Gross Domestic Product (GDP) is growing, and the government deficit is decreasing.

Bucharest hopes to receive additional financial and technical assistance from international financial institutions and Western governments. At the same time, Romania is attempting to privatize state-run industries, reduce foreign debt, and control fiscal policy. If government reforms fail or if Romania's ability to seek public and private sector monetary support is unsuccessful, it is highly probable that Romania will again fall into a financial crisis.

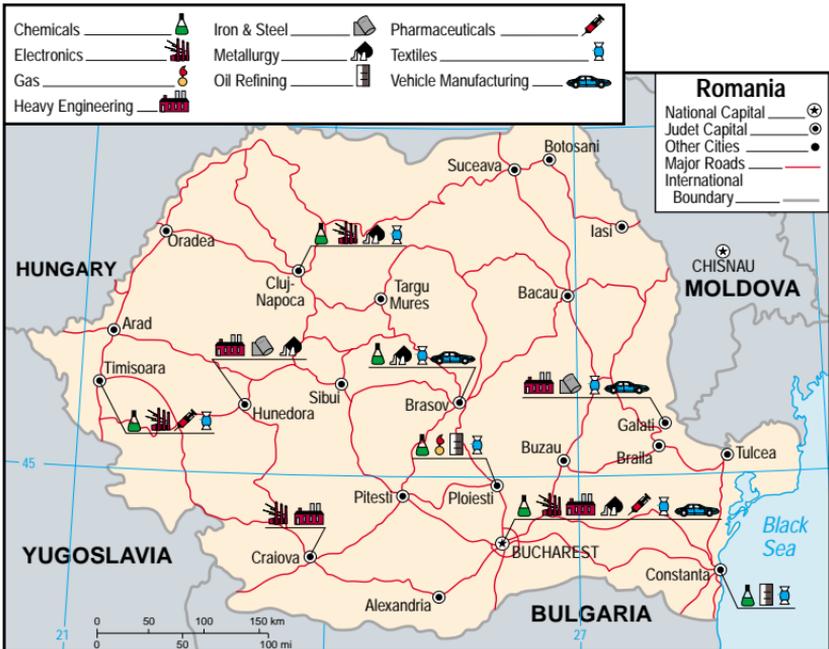
### ***Industry***

Under the communist system, Romania relied on heavy industry investments, which led to poor economic conditions. The Romanian landscape became littered with refineries, smelters, and chemical factories. Since 1989, industrial production declined by 50 percent. Even those factories that are potentially competitive have seen no new investment since the 1970s, and pioneer foreign investors in the early 1990s were disappointed with low productivity and government restrictions, which scared off further investment. The automotive industry is the only sector that grew with

foreign investment. In 1997, Romania introduced limited reforms to reduce excess capacity, allowing many factories to go bankrupt. The reforms began to pay off in 2000 as the industrial sector recovered; industrial output grew by 8.2 percent. The recovery was led by light industrial enterprises such as food processing, textiles, footwear, and machinery.

The Romanian chemical industry consists of sodium hydroxide, chlorosodium products, fertilizers, industrial dye, black carbon, synthetic fibers, pharmaceuticals, and cosmetics. There are plans to privatize many chemical companies as part of their 1998 reform plans.

The mining industry went through a restructuring phase during which thousands of workers lost their jobs. In the Jiu Valley region, an esti-



**Industry**



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## **Industrial Plant**

mated 17,000 miners lost jobs, forcing many families into poverty. There is a strong militant group in the Jiu Valley that continues to seek recognition for the miners. The downsizing is also affecting the steel industry. The government plans to decrease its annual steel-making production from 17.5 million tons to 6 million tons.

## ***Agriculture***

Romania was once one of the largest agricultural producers in Europe, accounting for 13.9 percent of GDP. The country's varying climate and abundant landscapes provide many optimal sites for agriculture. The Wallachia plains and other fertile areas are well suited for growing grains; the Transylvania hills and mountains are ideal for raising live-



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### Harvesting the Hay

stock. Moldavia has less fertile soil that is adequate for growing potatoes and corn. Romania's main agricultural market includes wheat, corn, barley, animal feed, fruit, potatoes, sugar, and wine grapes. The country's wine industry has had great success recently. Foreign investment in the industry has grown significantly, prompting Romania to increase its wine production plans. In June 2000, Romania experienced its worst drought in nearly 50 years, which affected about 40 percent of its agricultural land. Large irrigation plans are needed to repair the damage, but the government has allocated only US\$9.5 million of the estimated US\$200 million needed to fully recover from the drought.

### *Resources*

Oils and natural gas reserves, once abundant, are now near depletion. Coal is available in large quantities, but is of extremely poor quality. Romania has become extremely reliant on hydroelectricity (about 39

percent of national energy consumption) and continues to develop new hydroelectric plants. Romania's nuclear energy program is outdated and its infrastructure is crumbling.

### ***GDP***

Like most of the other former communist countries, Romania's economy declined by nearly 30 percent from 1990-93 as old trade connections failed and cheap energy imports from the Soviet Union ended. Romania, however, implemented few of the reforms necessary for restructuring the economy. By allowing more credit at state-owned banks and stepping up subsidies to industries, the government was able to induce economic growth from 1994-96, but this growth was unsustainable and the economy again fell into recession in 1997, exacerbated by the 1998 Russian economic crisis and the 1999 closing of the Danube during NATO's bombing campaign against Yugoslavia.

During this recession, however, the government finally undertook some of the long-delayed reforms, including shutting down loss-making factories and eliminating many price controls and subsidies, allowing market signals to function properly. In 2000, the economy resumed growth with a 1.6 percent increase in the GDP, led by rising exports, and continued into 2001 on the strength of consumer demand, with growth for the year forecast to be 4 percent.

The *leu* is becoming more stable after years of uncontrollable inflation and regular periods of depreciation against the U.S. dollar.

### **Inflation Rate**

Despite maintaining price controls on many crucial goods, Romania suffered high inflation in the early 1990s. Excessive government spending was the main cause of inflation, as social spending continued to inject money into the economy even as production declined, especially in the period from 1994-96. In 1997, the government removed price controls, resulting in a surge of inflation, which reached 154.8 percent for the year. The government was forced to slash its spending and restrict bank access to credit to regain control, bringing the inflation rate down to 59 percent in 1998.



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### **Dilapidated Section of Bucharest**

Even with tighter fiscal and monetary conditions, inflation remained at the high level of 45.9 percent in 1999 because of rising international oil prices and at 45.6 percent in 2000 because a drought increased food prices. The government has tightened its fiscal policy to achieve an inflation rate at about 34 percent and hopefully the inflation will continue to fall at a steady rate.

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## **THREAT**

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### **Crime**

Crime is on the rise in Romania, although most incidents are not violent. Visitors face a fairly high risk of mugging and pocket picking. Following these guidelines may reduce one's vulnerability:

- Avoid wandering around alone at night; avoid dimly lit remote areas and closely milling crowds.
- Carry only what you are prepared to lose (only necessary amounts of cash or credit cards, and do not wear expensive-looking jewelry).
- Avoid keeping wallets in back pockets; women should tuck purses under their arms to minimize the risk of theft.
- Walk in groups and be aware of busy streets and back alleys, especially in areas with high traffic congestion. Drivers in Romania generally do not yield the right-of-way to pedestrians.
- Don't trade money on the street. Avoid people who approach on the street to exchange money, as this is illegal. Only exchange dollars for local currency at a licensed exchange house (*Case de Schimb*) or at hotels. Get and keep a receipt, which must be shown when paying hotel bills in local currency.
- Scams are common on the streets of Bucharest. A young person may approach a visitor and ask to see a 10,000 *lei* bill because they have never seen one before. The bill is then stolen.
- Thieves also impersonate police officers to extort money. If approached by a police officer, ask him or her to escort you to the police station to conduct business.

## Terrorism

Terrorist groups may have a minor presence in Romania, with individuals or small cells operating in cooperation with international crime organizations.

## Ethnic Unrest

Prior to 1996, the Hungarian minority in Romania regularly protested for greater autonomy and language rights. Violence was minimal. The government and the Hungarians were able to work their differences out through a cooperation and friendship treaty signed in 1996.

## Corruption

Romania has been labeled by some organizations as one of the most corrupt countries among the EU candidates. Romania's political system has been charged as a source of the corruption, rather than part of a solution. Corruption especially threatens the judicial system.

## Regional and Internal Threat

Romania does not have any major threats except a few resource disputes. One issue involves the Ukraine and the continental shelf of the Black Sea under which significant gas and oil deposits may exist. Bucharest and Kiev agreed in 1997 not to engage in any drilling activity in the disputed area.

## Intelligence Threat

Prior to 1989, the *Securitate*, now named the Romanian Intelligence Service (SRI), was Romania's notorious secret police and premier intelligence service. Since 1990, at least five other intelligence organizations have emerged performing similar and overlapping functions. With the end of the Cold War and Romania's bid for NATO and EU membership, the intelligence threat has lessened.

- The Foreign Intelligence Service of the Ministry of Foreign Affairs was created in January 1990. It is involved in both external and internal matters affecting domestic politics.
- The Counter-Intelligence Directorate of the General Staff of the Romanian Army (RA) is part of the Defense Ministry. This organization played a key role in politically controlling the RA during Ceausescu's rule. However, since then the power of this organization (as well as the RA) in domestic politics has decreased.
- The UM-0215, formally known as the Intelligence Directorate of the Internal Affairs Ministry, was created in February 1990. Its exact function is unclear; however, there is evidence that this organization is heavily involved in political intervention in, and manipulations of

Romanian politics. In April 1994, the creation of the Operative Surveillance and Intelligence Directorate within the Internal Affairs Ministry was supposed to act as a counter-balance to the UM-0215. There is still debate on its success and purpose.

- The Special Telecommunications Service functions as the collector of SIGINT and focuses on the security of government communications. It is probably under the operational control of the SRI; involved with the covert monitoring of Romania's telecommunication for the SRI.
- The Protection and Guard Service (PGS) is the former Special Guard and Protocol Unit of the Presidency. The PGS remains powerful, exercising coordinating intelligence gathering over the other agencies and the SRI for the president.

### **Threat to U.S. Forces**

U.S. forces face minimal threat in Romania. Health issues and petty crime are the biggest problems for visitors to Romania. There is no strong anti-U.S. sentiment in the country.

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## **ARMED FORCES**

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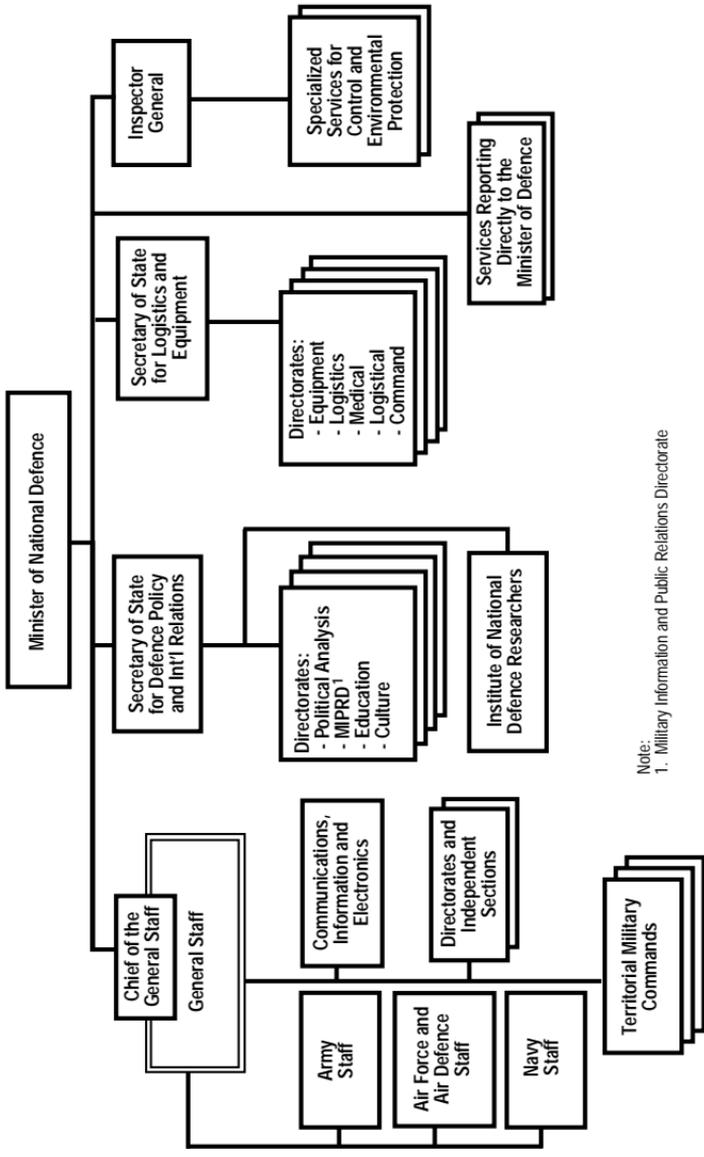
### **Organization**

The armed forces of Romania consist of 140,000 personnel who serve in the Army, Navy, Air and Air Defense Forces, Paramilitary Forces, and Civil Defense. The president is the commander-in-chief and presides over the Supreme Council of National Defense.

### **Strategy and Doctrine**

The primary mission of the military is to provide national defense and train for its recent entrance into the NATO alliance.

The Romanian government is in the last stage of a major reorganization of the armed forces and the defense-related industries. The first phase



Note:  
1. Military Information and Public Relations Directorate

## Military Organization

focused on discarding the Romanian General Staff Office's library and ministerial regulations on defense. New organizations included the Armed Forces High Military Council, the Council of Military Education, and the Superior Council of Military Education.

The second phase included transferring border guards to the Interior Ministry; the creating of wartime-only territorial forces, disbanding the counter-intelligence service and the patriotic guard forces; and reorganizing military academies. The objective of the reform has been to build a modern, democratically controlled, efficient, but much smaller professional army that meets NATO standards. The leadership wants to ensure Romania's participation, when possible, in European efforts in reinforcing the region's security. Changes have occurred in the highest levels and throughout subordinate command echelons, to include substantial reductions in both personnel and equipment.

### **Key Military Personnel**

<b>Commander-in-Chief</b>	Ion Iliescu
<b>Prime Minister</b>	Adrian Nastase
<b>Minister of Defense</b>	Ioan Mircea Pascu
<b>Minister of Foreign Affairs</b>	Mircea Dan Geoana
<b>Minster of Interior</b>	Ioan Rus
<b>Chief of the General Staff</b>	General of the Army Mihail Eugeniu Popescu
<b>Army Chief of Staff</b>	General Eugen Badalan
<b>Navy Chief of Staff</b>	Vice Admiral Rudencu Corneliu
<b>Air/Air Defense Forces Chief of Staff</b>	Lt. General Gheorghe Bucse

### ***Personnel***

Total active manpower of the Romanian Armed Forces is numbered at 140,000.

The fundamental mission of the Romanian armed forces is to defend the country. Military service is compulsory for males upon reaching age 20. Service lasts 12 months in the army and air force, and 18 months in the navy. Following fulfillment of an active duty obligation, troops are assigned to the Ready Reserve, with annual call-up for 5 years. An individual can be called to active duty until his 35th birthday. The Ready Reserve force totals 626,000. All former military personnel may be mobilized in the event of a conflict, raising the reserve pool by 203,000. It is likely Romania could raise an estimated 4.5 million troops if necessary.



**Army General Officer**

## **Security Issues**

With the break-up of both the Soviet Union to the north and the former Yugoslavia to the west, Romania's greatest concerns are a perceived security vacuum in Europe and its desire to stay out of any potential conflicts in the Balkans.

## **Civil-Military Relations**

The president is the commander-in-chief of the armed forces and chairs the Supreme Council of National Defense. This council coordinates and organizes activities ensuring Romania's defense and national security. The parliament controls the defense budget and exercises the authority over the activities of the armed forces. It oversees legislation, which covers conditions of military service, recruit-

ment, and missions. With the senate, the parliament resolves mobilization issues, declares a state of war, and determines when to suspend or stop military hostilities.

### **Command and Control**

As the new government attempts to get the country back on a sound economic footing with the rest of Europe, the efforts to reorganize the armed forces has become sluggish. Areas of responsibility have become blurred and the military is functioning less effectively. Under the new command structure a minister of national defense will be assisted by a presidential appointee filling the chief of the General Staff position. Additionally, two new secretaries of state (one's duties will include policy analysis and international relations, military education, information, and public relations; the other's duties will include logistics, medical assistance, investment, and construction) and an armed forces' inspector general will be included.



**Romanian Military Unit**

## Training

There have been significant changes to training since 1989. Noncommissioned officers and officers receive highly technical and professional training. There is a strong emphasis on Western-style training and learning the English language. Military school curricula include the study of NATO and international peacekeeping operations.

Training for conscripts has also changed. The receiving unit used to provide individual basic training but this now occurs at a permanent, centralized training area. Recruits receive 4 months of basic training; then, they are sent to their units, where they fulfill the remaining 8 months of their national military service obligation. This new centralized training system has resulted in uniform training for all recruits. This has raised training proficiency and has allowed the army's operational units to concentrate on unit and organizational training.



Training Exercise



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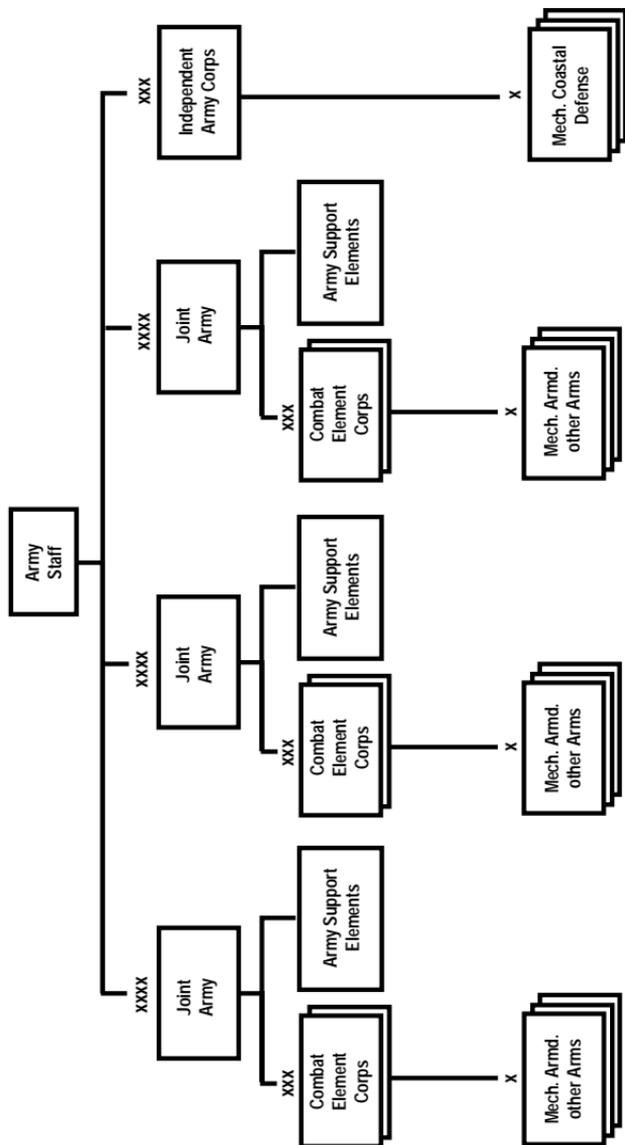
### **Cold Weather Training**

The only service to consolidate all of its basic training at one location is the navy. This training is conducted at the base in Mangalia. Naval forces conduct 30 days of at-sea drills per year. This number is relatively low compared to U.S. and NATO standards. The crew members level of proficiency is poor. Unless funding levels significantly increase it is unlikely that naval exercises will be held more often.

Air force pilots see few flight hours, resulting in standards below the United States. Poor flight training has been determined as the main cause of aircraft losses in recent years. The air force is further hampered by the high number of inoperable aircraft and that all existing runways and the entire ground infrastructure need rebuilding.

### **Army**

Romanian ground forces number around 69,334 personnel. They also have 400,000 reservists they can call in event of an emergency. The army recently formed a brigade-type organization to replace their former




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## Army Organization

Soviet-style organization. The army's primary function is to provide national defense by defending the borders.

### ***Deployment***

The Romanian army deploys a light contingent of troops near each of its borders, with the heaviest concentration along the Bucharest to Constantan corridor, leading to the Black Sea. The easing of tensions in Eastern Europe led to a draw down of Romanian forces on the Hungarian and Yugoslavian borders. However, security concerns and refugee problems stemming from conflict in the former Yugoslav republics since mid-1991 led to a redeployment of troops in this area.

<b>Major Ground Units</b>	<b>Location</b>	<b>Personnel</b>
Land Forces	Bucharest	69,530



**Romanian Peacekeeper in Afghanistan**

Ground Forces Enlisted Rank Insignia						
Romanian	Fruntas	Caporal	Sergent	Sergent Angajal cu Contract	Sergent Major	Plutonier
U.S. Equivalent	Private 1st Class	Corporal	Sergeant	Career Sergeant	Staff Sergeant	Sergeant 1st Class
Romanian	Plutonier Major	Plutonier Adjutant	Plutonier Adjutant Sef	Maistru Militar IV-A	Maistru Militar Classa III-A	Maistru Militar Classa II-A
U.S. Equivalent	Master Sergeant	Sergeant Major	Command Sergeant Major	Warrant Officer 4th Class	Warrant Officer 3rd Class	Warrant Officer 2nd Class
Ground Forces Officer Rank Insignia						
Romanian	Sublocotenent	Locotenent	Capitan	Maior	Maistru Militar Classa I	Maistru Militar Principal
U.S. Equivalent	2d Lieutenant	Lieutenant	Captain	Major	Warrant Officer 1st Class	Chief Warrant Officer
Romanian	Locotenent Colonel	Colonel	General de Brigada	General de Divizie	General de Corp de Armata	General de Armata
U.S. Equivalent	Lieutenant Colonel	Colonel	Brigadier General	Division General	Army Corps General	Army General

## Army Rank Insignia

2 Paratroops Brigade	Clinцени	2,050
30 Guard Regiment	Bucharest	1,060
1 Territorial Army Corps	Bucharest	17,280
4 Antiaircraft Artillery Brigade	Targu Jiu	800
2 Logistic Base	Targoviste	1,210
60 Paratroops Battalion	Buzau	520
1 Territorial Mechanized Brigade	Bucharest	1,630
2 Motorized Infantry Brigade	Craiova	3,370
34 Territorial Mechanized Brigade	Constanta	1,810
2 Mountain Brigade	Brasov	3,560
1 Logistic Brigade	Ploiesti	810
10 Territorial Army Corps	Iasi	18,690
6 Antiaircraft Artillery Brigade	Braila	1,630
10 Engineer Brigade	Braila	2,090
8 Artillery Brigade	Focsani	3,180
282 Mechanized Brigade	Focsani	3,690
15 Territorial Mechanized Brigade	Iasi	1,388
33 Territorial Mechanized Brigade	Botosani	1,110
63 Territorial Tank Brigade	Bacau	1,120
61 Territorial Mountain Brigade	Miercurea Ciuc	2,430
4 Territorial Army Corps	Cluj Napoca	21,290
69 Territorial Artillery Brigade	Simleul Silbaniei	990
5 Mixt Antiaircraft Artillery Brigade	Cluj Napoca	720
4 Territorial Engineer Brigade	Deva	1,000
4 Logistic Base	Dej	1,640
18 Territorial Mechanized Brigade	Timisoara	2,130
11 Motorized Infantry Brigade	Oradea	1,490
81 Mechanized Brigade	Bistrita	3,660
230 Motorized Infantry Brigade	Baia Mare	1,880
6 Tank Brigade	Targu Mures	3,030
5 Territorial Mountain Brigade	Alba Iulia	1,060

### ***Equipment***

The primary equipment composition of the Romanian Army is of Soviet origin unless otherwise noted.

## Armor

Type	Role	Quantity
T-54/55	Main battle tank	720
TR-580	Main battle tank	230
TR-85	Main battle tank	310
TABC-79	Reconnaissance Vehicle	390
MLI-84	Infantry Fighting Vehicle	180
MLVM	Infantry Fighting Vehicle	90
TAB-71 (Romania)	Personnel Carrier	880
TAB-77 (Romania)	Personnel Carrier	170

## Artillery

Type	Role	Quantity
152-mm M1985	Howitzer	110
152-mm M1981	Howitzer	330
M-30	Howitzer	160
ML-20	Howitzer	50
130-mm M1982	Mortar	360
122-mm APR-40	Multiple Rocket Launcher	170
LUNA M/FROG-7	Rocket System	10
SS-1C SCUD B	Ballistic Missile	13

## Antitank Weapons

Type	Role	Quantity
AT-3	Antitank guided missile	100
9P133 ATGM (9M14 Malyutka)	Antitank guided missile	406
57-mm M1943	Antitank gun	1,500
73-mm SPG-9	Recoilless rifle	500
AG-7	Antitank rocket launcher	1,000
RPG-7	Rocket-propelled launcher	1,000

## Air Defense

Type	Role	Quantity
SA-2/GUIDELINE	(Med/High Altitude)	135
SA-6/GAINFUL	(Low/Med Altitude)	60
SA-9/GASKIN	Surface-to-Air	32
100-mm KS-19	Antiaircraft gun	30
85-mm KS-12	Antiaircraft gun	75
57-mm S-60	Antiaircraft gun	150
57-mm ZSU-57-2 SP	Antiaircraft gun	60
37-mm M1939	Antiaircraft gun	100
30-mm M53	Antiaircraft gun	300
23-mm ZSU-23-4 SP	Antiaircraft gun	50
14.5-mm ZPU-2/4	Light antiaircraft guns	200/300

## Navy

Romanian naval forces number approximately 9,000 personnel, with roughly 900 officers and 8,000 enlisted. The primary function of the navy is to maintain control of Romanian territorial waters. The navy deploys in the Black Sea region, and occasionally deploys to the Mediterranean. The Romanian navy has participated in numerous NATO missions and exercises and will continue to train for future missions. The navy staff is located in Bucharest with the operational headquarters in Constanta. The navy is divided



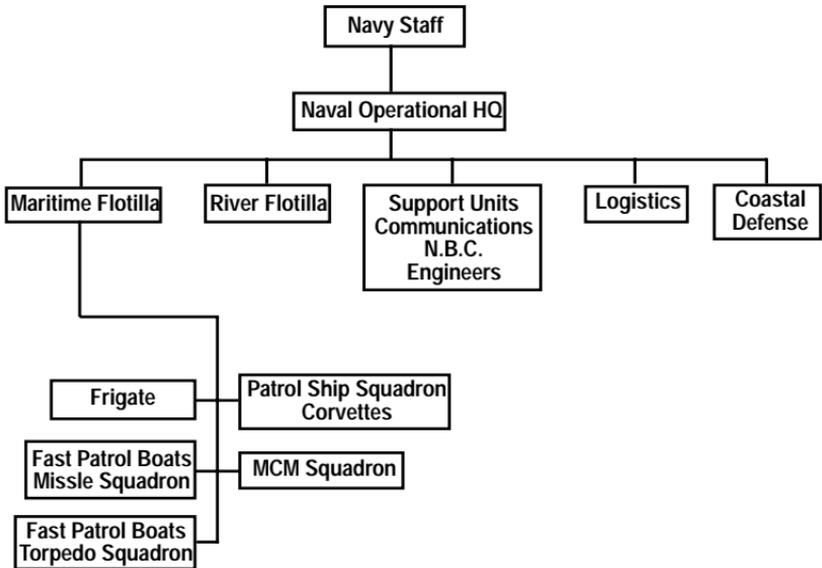
**Navy Admiral**

among two flotillas (maritime and riverine), coastal missile and artillery

units, logistics support, and support units (communications, NBC, and engineering). The Black Sea flotilla has 1 frigate, 4 ship squadrons, and support units (communications, NBC, and engineering). The River Flotilla is based out of Tulcea and Galati and maintains security along the Danube and in the Danube delta. The major naval bases are Constanta (home to the MARASETI frigate, the patrol ship squadron, and MCM squadron), Mangalia (home to the fast patrol boat squadron), and River

<b>Naval Forces Enlisted Rank Insignia</b>						
<b>Romanian</b>	Fruntas	Caporal	Sergent	Maistru Militar IV-A	Maistru Militar Classa III-A	Maistru Militar Classa II-A
<b>U.S. Equivalent</b>	Seaman	Seaman 1st Class	Petty Officer 3rd Class	Warrant Officer 4th Class	Warrant Officer 3rd Class	Warrant Officer 2nd Class
<b>Naval Forces Officer Rank Insignia</b>						
<b>Romanian</b>	Aspirant	Locotenent	Capitan	Locotenent Comandor	Maistru Militar Classa I	Maistru Militar Principal
<b>U.S. Equivalent</b>	Ensign	Lieutenant Junior Grade	Lieutenant	Lieutenant Commander	Warrant Officer 1st Class	Chief Warrant Officer
						
<b>Romanian</b>	Capitan Comandor	Comandor	Contraamiral	Viceamiral	Viceamiral Comandor	Amiral
<b>U.S. Equivalent</b>	Commander	Captain	Commodore	Rear Admiral	Vice Admiral	Admiral

## Naval Forces Rank Insignia




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## Naval Organization

Flotilla based out of Tulcea and Galati. Romania has significantly downsized their navy and closed a number of smaller naval bases. The navy also has 600 naval infantry troops, dedicated primarily to the defense of the Danube Delta and riverine operations.

The Romanian navy is task organized for river, estuary, and coastal defense. The force is believed to be capable of defending Romania's Black Sea interests. The fleet is increasing its deployments and efficiency. Long-term plans incorporate a steady modernization program. The navy has acquired two Boxer Class frigates from the United Kingdom and expects delivery in 2003 and 2005. This will provide an increase in the capabilities and NATO inter operability. The Coastal Defense Force is organized geographically in four sectors along the Romanian coast. Operationally, the force is thought to consist of four coastal artillery battalions.

## Major Naval Units

Unit	Location	Personnel
Naval Forces Staff	Constanta	8,170
307 Naval Infantry Battalion	Babadag	580

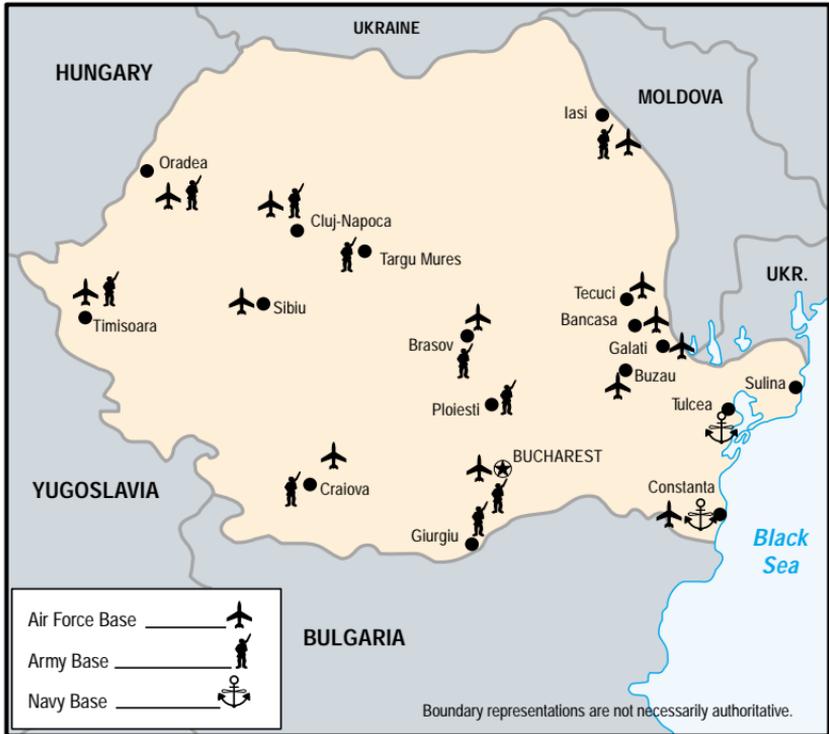
## Equipment

Type	Role	Quantity
Ex-Soviet KILO Class	Submarine	1
MARASESTI Class	Destroyer	1
TETAL I Class (ex-Soviet KONI Class)	Corvette	5
TETAL II Class	Corvette	2
Ex-Soviet TARANTUL I Class	Corvette	3
MUSCA	Minesweeper	2
COSAR Class	Minelayer	2
VD-141	Inshore minesweeper	25
Ex-Soviet OSA I Class	Missile craft	3
Chinese HUCHUAN design	Torpedo craft	19
NALUCA Class (EPITROP)	Torpedo craft	12
River patrol craft	Various	27
River patrol boat	Various	31

In addition, approximately 50 auxiliary and smaller river craft are in service with the surface and the river flotilla.

## Air and Air Defense Forces

Air force personnel number 43,500, of which approximately 25,000 are conscripts. There are also 40,000 reservists. The air force and anti-aircraft defense forces are deployed in a primarily defensive role. The air force is undergoing a major reorganization as part of the armed forces 2000 concept. The Romanian air force conducts all military air operations and coordinates with the Romanian army, Coastal Defense Force and all ground-based air defense operations. Romania is divided into



### Armed Forces Disposition

two aeronautical regions (eastern and western). The air force is organized into two air corps, with subordinate air regiments each operating two or three squadrons (usually consisting of 12 aircraft per squadron). They also have SAM and anti-aircraft assets of the anti-aircraft defense force, which has a parachute brigade a commando force, and special forces weaponry. Romanian pilots train 15 to 20 hours per year. Their combat pilots receive 40 to 60 hours of flight time per year, which is considered dangerously low by the NATO and U.S. standard minimum of 100 hours. Many pilots duty billets alternate between a year of flight

<b>Air Forces Enlisted Rank Insignia</b>						
<b>Romanian</b>	Fruntas	Caporal	Sergent	Sergent Angajal cu Contract	Sergent Major	Plutonier
<b>U.S. Equivalent</b>	Private 1st Class	Corporal	Sergeant	Career Sergeant	Staff Sergeant	Sergeant 1st Class
						
<b>Romanian</b>	Plutonier Major	Plutonier Adjutant	Plutonier Adjutant Sef	Mastru Militar IV-A	Mastru Militar Classa III-A	Mastru Militar Classa II-A
<b>U.S. Equivalent</b>	Master Sergeant	Sergeant Major	Command Sergeant Major	Warrant Officer 4th Class	Warrant Officer 3rd Class	Warrant Officer 2nd Class
<b>Air Forces Officer Rank Insignia</b>						
<b>Romanian</b>	Sublocotenent	Locotenent	Capitan	Maior	Mastru Militar Classa I	Mastru Militar Principal
<b>U.S. Equivalent</b>	2d Lieutenant	Lieutenant	Captain	Major	Warrant Officer 1st Class	Chief Warrant Officer
						
<b>Romanian</b>	Locotenent Colonel	Colonel	General de Brigada	General de Divizie	General de Corp de Armata	General de Armata
<b>U.S. Equivalent</b>	Lieutenant Colonel	Colonel	Brigadier General	Division General	Army Corps General	Army General

## Air Forces Rank Insignia

duty and a year of non-flight duty. The Romanian air force continues to train and prepare for NATO Exercise PARTNERSHIP FOR PEACE.

### **Major Air Units**

<b>Unit</b>	<b>Location</b>	<b>Personnel</b>
Air Force Staff	Bucharest	21,320
1 Air Division	Ploiesti	12,400
57 Air Base	Constanta	1,710
71 Air Base	Campia Turzil	1,570
86 Air Base	Fetesti	1,230
93 Air Base	Timisoara	1,490
2 Air Division	Timisoara	2,910
91 Air Base	Deveselu	940

### **Equipment**

#### **Fixed-Wing**

<b>Type</b>	<b>Role</b>	<b>Quantity</b>
MiG-21 LANCER	Interceptor	177
MiG-29-12/FULCRUM	Interceptor	18
MiG-23MF/FLOGGER	Interceptor	4
MiG-17/FRESCO	Fighter/Bomber	15
IAR-99A/B	Ground attack	72
IL-28/COOT	Transport	3
An-2/COLT	Transport	18
An-24/COKE	Transport	10
An-26/CURL	Transport	16
Boeing 707-3 K16	VIP	2

#### **Rotary**

<b>Type</b>	<b>Role</b>	<b>Quantity</b>
Mi-2/HOPLITE	Utility	20
Mi-8P (HIP-C)	Medium Support	22
IAR316 (Alouette III)	Utility/SAR	12

<b>Type</b>	<b>Role</b>	<b>Quantity</b>
IAR330 PUMA	Tactical Support	8
SA-365N	VIP	4

### **National Police**

The police force operates under the Ministry of the Interior. It is divided into 8 brigades and has 10,000 personnel. Officers deploy throughout Romania, mainly in urban areas. They are equipped with small arms, light armored personnel carriers, helicopters, and light patrol craft.

### **Paramilitary Forces**

Romania does not have any paramilitary organizations.

### **Border Guards**

Romania's border guard force has 22,900 personnel and a gendarmerie numbering 34,800. The border guard began programs of modernization in January 1999. The reforms included the establishment of a separate coast guard and the conversion of the border guards into a purely civilian organization known as the General Inspectorate for State Border Crossing Protection, Surveillance, and Control, an organization similar to the U.S. Customs Service. The new organization operates under the jurisdiction of the Ministry of the Interior.

### **Weapons of Mass Destruction**

Romania does not possess any weapons of mass destruction.



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## APPENDIX A: Equipment Recognition

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### INFANTRY WEAPONS

#### 9-mm VZ 24, 26



<b>Cartridge</b>	9- x 19-mm Parabellum
<b>Rate of Fire</b>	Cyclic; 650 rds/min
<b>Caliber</b>	7.62 x 25-mm (pistol type P)
<b>System of Operation</b>	Blowback, selective fire
<b>Overall Length</b>	686 mm
<b>Magazine Capacity</b>	32-round box magazine
<b>Weight (Loaded)</b>	3.41 kg

**NOTE:** Model shown is the VZ 26; Model 24 has a wooden stock.

## 9-mm Shipka



<b>Cartridge</b>	9- x 19-mm Parabellum or 9- x 18-mm Makarov
<b>Rate of Fire</b>	Cyclic; 700 rds/min
<b>Caliber</b>	9-mm
<b>System of Operation</b>	Conventional blowback
<b>Overall Length</b>	Butt extended 710 mm (Parabellum); 625 (Makarov)
<b>Magazine Capacity</b>	25-round box magazine (32-rd for Makarov)
<b>Weight (Loaded)</b>	2.75 kg

## 5.45-mm RATMIL AK-74



<b>Cartridge</b>	5.45- x 39-mm
<b>Rate of Fire</b>	Cyclic; 600 rds/min
<b>System of Operation</b>	Gas, selective fire
<b>Overall Length</b>	Standard and folding models, butt extended, 940 mm
<b>Magazine Capacity</b>	30- or 40-round detachable box magazine
<b>Weight (Empty)</b>	3.41 kg

**NOTE:** Romanian model is direct copy of RFAS AK-74; other RATMIL models include "reduced" model, which has a 302-mm-long barrel similar to AKSU-74.

## 5.45-mm RPK-74



<b>Cartridge</b>	5.45 x 39-mm
<b>Rate of Fire</b>	Cyclic: 6500-650 rds/min Practical: 150 rds/min
<b>Effective Range</b>	460 m
<b>System of Operation</b>	Gas, selective fire
<b>Overall Length</b>	1.082 m
<b>Magazine</b>	45-, 40- or 30-round box magazine
<b>Weight (Empty)</b>	9 kg

**NOTE:** Romania's RomArm 5.45 is similar to the RPK-74 (essentially a heavy-barrelled version of the AK-74), but slightly longer; shown above with bipod folded on the barrel.

## 7.62-mm AK-47



<b>Maximum Effective Range</b>	400 m
<b>Caliber</b>	7.62- x 39-mm
<b>System of Operation</b>	Gas, selective-fire
<b>Overall Length</b>	874 mm
<b>Magazine Capacity</b>	30-rd, staggered row detachable box magazine
<b>Weight (Loaded)</b>	3.8 kg

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

**NOTE:** While the AK is a heavy weapon, it climbs rapidly during automatic fire.

## 7.62-mm Model 90 AKM



<b>Maximum Effective Range</b>	500 m
<b>Caliber</b>	7.62- x 39-mm
<b>System of Operation</b>	Gas, selective-fire
<b>Rate of Fire</b>	Cyclic, 600 rds/min
<b>Magazine Capacity</b>	30-rd, detachable box magazine
<b>Overall Length</b>	879 mm
<b>Weight (Empty)</b>	3.15 kg

**NOTE:** RomArm AKM models follow the standard AKM assault rifle design. Models in the series used in the Romanian Army include the Model 63 (fixed stock), Model 65 (upwards-folding stock), Model 90 (side-folding stock), and the Model 90 short barrel. Romania also uses the 7.62-mm RPK light machinegun, which is similar to the AKM, but with a longer, sturdier barrel that takes magazines from the AK-47 or AKM.

## 7.62-mm PK/PKS



<b>Cartridge</b>	7.62- x 54R
<b>Rate of Fire</b>	Cyclic: 650-720 rds/min Effective: 250 rds/min
<b>Effective Range</b>	1,000 m
<b>System of Operation</b>	Gas, open bolt, fully automatic, belt fed
<b>Overall Length</b>	1.173 m
<b>Magazine Capacity</b>	250-round non-disintegrating metallic belt or 100-round assault magazine
<b>Weight (Empty)</b>	9 kg

## 7.62-mm Sniper Rifle



<b>Maximum Effective Range</b>	800 m
<b>Caliber</b>	7.62-mm
<b>System of Operation</b>	Bolt action, repeater
<b>Overall Length</b>	1.15 m
<b>Magazine Capacity</b>	5-round, detachable box magazine
<b>Weight (Loaded)</b>	4.9 kg

**Note:** Sniper rifle shown equipped with commercial pattern optical sight.

## 40-mm AG-40 Grenade Launcher



<b>Operation</b>	Single shot
<b>Maximum Range</b>	400 m
<b>Feed</b>	Manual loading
<b>Weight (Loaded)</b>	1.64 kg
<b>Length</b>	450 mm

**NOTE:** Designed to be attached under the forward handguards of AKM- and AK-74-pattern assault rifles (as pictured here), but to fire Western-pattern, low-velocity 40x108-mm HE and TP grenade cartridges.

## 40-mm AGA-40 Grenade Launcher



<b>Operation</b>	Blowback
<b>Maximum Range</b>	1,300 m
<b>Rate of Fire</b>	Cyclic, 300-400 rds/min
<b>Feed</b>	10-round drum magazine
<b>Weight (with Full Drum)</b>	43 kg
<b>Length</b>	1.46 m
<b>Width</b>	775 mm
<b>Height</b>	600 m

## 82-mm M94 Mortar



<b>Maximum Range</b>	4,500 m (5,700 m HE extended-range)
<b>Rate of Fire</b>	20 rds/min
<b>Combat Weight</b>	47 kg
<b>Length of Barrel</b>	1.44 m

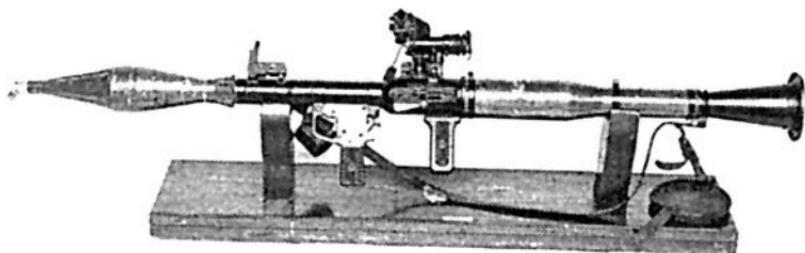
**NOTE:** Can be broken down into four main components to be carried by three people. It can also be carried by a light vehicle or helicopter.

## 120-mm M43 Mortar



<b>Crew</b>	6
<b>Maximum Range</b>	5,700 m
<b>Rate of Fire</b>	12-15 rds/min
<b>Combat Weight</b>	280 kg
<b>Length</b>	1.854 m
<b>Width</b>	1.62 m
<b>Height</b>	1.206 m
<b>Bomb Weight</b>	15.4 kg

## RPG-7



<b>Type</b>	Portable rocket launcher
<b>Launch Weight</b>	7 kg
<b>Length</b>	950 mm
<b>Caliber</b>	40-mm
<b>Warhead</b>	2.6 kg; HEAT, piezoelectric fuse
<b>Maximum Range</b>	330 m/500 m (moving/stationary targets)

## ARMOR

### T-54/55



<b>Crew</b>	4
<b>Armament</b>	Main: 1 x 100-mm D-10T2S rifled gun w/43-rds; Coaxial and bow: 7.62-mm SMGT MGs w/3,500-rds; Antiaircraft: 12.-7-mm DShK w/500-rds
<b>Maximum Speed</b>	50 km/h
<b>Maximum Range</b>	460 km (650 km w/long range tanks)
<b>Fuel Capacity</b>	960 l
<b>Combat Weight</b>	36,000 kg
<b>Length</b>	9 m
<b>Width</b>	3.76 m
<b>Height</b>	3.03 m
<b>Night Vision</b>	Yes
<b>NBC</b>	Yes
<b>Fording</b>	1.4 m
<b>Gradient</b>	60%
<b>Vertical Obstacle</b>	0.8 m
<b>Trench</b>	2.7 m

## TR-85



<b>Crew</b>	4
<b>Armament</b>	Main: 100-mm rifled tank gun; Coaxial: 7.62-mm MG Antiaircraft: 12.7-mm MG
<b>Maximum Speed</b>	60 km/h
<b>Maximum Range</b>	310 km
<b>Combat Weight</b>	50,000 kg
<b>Length</b>	9.96 m
<b>Width</b>	3.43 m
<b>Height</b>	3.10 m
<b>Night Vision</b>	Yes
<b>NBC</b>	Yes
<b>Trench</b>	2.8 m
<b>Vertical Obstacle</b>	0.9 m

**NOTE:** The TR-85 is a local Romanian design and is similar in appearance to the Russian T-55, but has a new suspension and a new German diesel engine.

## TR-580



<b>Armament</b>	Main: 100-mm rifled tank gun; Antiaircraft: 12.7-mm MG
<b>Maximum Speed</b>	60 km/h
<b>Maximum Range</b>	310 km
<b>Combat Weight</b>	38,200 kg
<b>Trench</b>	2.8 m
<b>Vertical Obstacle</b>	0.9 m

**NOTE:** Romanian-built TR-580 is believed to have been built prior to TR-85, possibly as a testbed program.

## MLI-84 Infantry Fighting Vehicle



<b>Type</b>	Armored Personnel Carrier
<b>Crew/Passengers</b>	2+9
<b>Armament</b>	Main: 73-mm 2A28 gun; Coaxial: 7.62-mm PKT MG Antiaircraft: 12.7-mm DshKM MG
<b>Turret Traverse</b>	360°
<b>Maximum Speed</b>	65 km/h (road); 7 km/h (water)
<b>Fuel Capacity</b>	110/150 liters per 100 km
<b>Combat Weight</b>	16,600 kg
<b>Length</b>	7.32 m
<b>Width</b>	3.15 m
<b>Height</b>	1.975 m
<b>Night Vision</b>	Yes
<b>NBC</b>	Yes

**NOTE:** The Romanian-built MLI-84 is virtually identical to the Russian BMP-1, but slightly larger and heavier. Weapon upgrade includes 2 Malyutka M2T guided missiles.

## MLVM Mountain Fighting Vehicle



<b>Crew/Passengers</b>	2+7
<b>Armament</b>	Main: 14.5-mm KPVT MG; Coaxial: 7.62-mm PKT MG
<b>Turret Traverse</b>	360°
<b>Maximum Speed</b>	48 km/h
<b>Fuel Capacity</b>	480 liters(120 in auxiliary tank in door)
<b>Combat Weight</b>	9,600 kg
<b>Length</b>	5.85 m
<b>Width</b>	2.714 m
<b>Height</b>	1.95 m
<b>Night Vision</b>	Yes
<b>NBC</b>	Yes

## Tab-71 Armored Personnel Carrier



Crew/Passengers	3+8
Armament	Main: 14.5-mm KPVT MG; Coaxial: 7.62-mm PKT MG
Turret Traverse	360°
Fording	Amphibious
Maximum Speed	95 km/h
Fuel Capacity	290 liters
Combat Weight	11,000 kg
Length	7.22 m
Width	2.834 m
Height	2.7 m
Night Vision	Yes
NBC	Yes

**NOTE:** The Romanian-built T-71 is an 8x8 APC similar to the Russian BTR-60PB. Its many variants include the TAB-71AR mortar carrier, which carries an 82-mm M77 mortar, as well as several types of maintenance, recovery and command vehicles.

## Tab-77 Armored Personnel Carrier



<b>Crew/Passengers</b>	2+9
<b>Armament</b>	Main: 14.5-mm KPVT MG; Coaxial: 7.62-mm PKT MG
<b>Turret Traverse</b>	360°
<b>Fording</b>	Amphibious
<b>Maximum Speed</b>	83 km/h (road); 10 km/h (water)
<b>Range</b>	550 km
<b>Fuel Capacity</b>	290 liters
<b>Combat Weight</b>	13,350 kg (with crew)
<b>Length</b>	7.42 m
<b>Width</b>	2.95 m
<b>Height</b>	1.92 m
<b>Night Vision</b>	Yes
<b>NBC</b>	Yes

**NOTE:** The Romanian-built T-77 is an 8x8 APC similar to the Russian BTR-70, but uses diesel engines. Another variant in the Romanian inventory is the B33 8x8 APC, which has a turbocharged, 268-hp diesel engine; this vehicle was made for maximum road speed of 80 km/h and range of 700 km.

## AM-425



<b>Crew/Passengers</b>	5
<b>Armament</b>	Main: 82-mm M1937; Coaxial: 7.62-mm PKT MG
<b>Fording</b>	Amphibious
<b>Maximum Speed</b>	83 km/h (road); 8 km/h (water)
<b>Range</b>	700 km
<b>Combat Weight</b>	9,275 kg (with crew)
<b>Length</b>	5.64 m
<b>Width</b>	2.805 m
<b>Height</b>	2.335 m
<b>Night Vision</b>	Yes
<b>NBC</b>	Yes

## ARTILLERY

### 85-mm D-44 Field Gun



<b>Crew</b>	8
<b>Caliber</b>	85-mm
<b>Max Range</b>	15,650 m
<b>Rate of fire</b>	15-20 rds/min
<b>Combat Weight</b>	1,703 kg
<b>Length</b>	8.34 m
<b>Width</b>	1.78 m
<b>Ammunition</b>	AP-T, AT-T, and HVAP-T
<b>Towing Vehicle</b>	6x6 truck

## 152-mm M1981/1985 Howitzer



<b>Caliber</b>	152-mm
<b>Max Range</b>	24,000 m
<b>Rate of fire</b>	2-4 rds/min
<b>Combat Weight</b>	7,500 kg
<b>Length</b>	7.105 m
<b>Width</b>	2.53 m
<b>Ammunition</b>	OF-540 HEI, OF 559 HEI, BR540 AP HEAT, Leaflet

## 122-mm M1938



<b>Crew</b>	8
<b>Maximum Range</b>	11,800 m
<b>Rate of Fire</b>	6 rds/min
<b>Combat Weight</b>	2,450 kg
<b>Prime Mover</b>	6 x 6 truck

## 130-mm M1982



<b>Crew</b>	7
<b>Max Range</b>	27,150 m
<b>Rate of Fire</b>	7 rds/min
<b>Combat Weight</b>	6,200 kg
<b>Length</b>	10.80 m
<b>Width</b>	2.59 m
<b>Height</b>	2.65 m

**NOTE:** Romanian M1982 is similar to Russian M-46 field gun, but has different weights and physical characteristics. However, the 130-mm HE full and reduced charged ammunition can be fired in both models.

## 122-mm Model 89



<b>Crew</b>	5
<b>Armament</b>	122-mm 2A31 Howitzer
<b>Max Effective Range</b>	15,300 m
<b>Ammunition</b>	HE, HEAT
<b>Turret Traverse</b>	360°
<b>Max Speed</b>	Road 65 km/h; water 7 km/h
<b>Fuel Capacity</b>	600 liters
<b>Max Road Range</b>	500 km
<b>Combat Weight</b>	17,500 kg
<b>Length</b>	7.305 m
<b>Width</b>	3.15 m
<b>NBC System</b>	Yes
<b>Night Vision</b>	Yes

**NOTE:** Romania has designed and built this system, similar to the Bulgarian 2S1, called the M1989, which uses a 2S1 turret on a local chassis. Romania inventory also includes some 2S1 vehicles.

## 122-mm APR40 Multiple Rocket Launcher



<b>Crew</b>	1-5
<b>Capacity</b>	40 barrels, 122-mm
<b>Reload time</b>	15 minutes
<b>Max Effective Range</b>	20,380 m
<b>Vehicle Speed</b>	80 km/h (road); 25 km/h (cross-country)
<b>Vehicle Range</b>	1,000 km
<b>Vehicle Combat Weight</b>	17,650 kg
<b>Vehicle Length</b>	7.39 m
<b>Vehicle Width</b>	2.51 m
<b>NBC System</b>	Yes
<b>Night Vision</b>	Yes

## 160-mm LAROM Missile System



<b>Crew</b>	1-5
<b>Capacity</b>	26 x MK4 rockets
<b>Launch time</b>	46 seconds
<b>Max Effective Range</b>	40 km
<b>Max Vehicle Speed</b>	80 km/h (road); 25 km/h (cross-country)
<b>Max Vehicle Range</b>	1,000 km
<b>Vehicle Combat Weight</b>	17,650 kg
<b>Vehicle Length</b>	7.39 m
<b>Vehicle Width</b>	2.51 m

**NOTE:** The LAROM system essentially consists of the Romanian Aerostar 122-mm APRA MRL upgraded and modified to accept the Israel LAR 160-mm rockets. A variation is fitted with the Accular guidance system.

## 9P133 ATGM (9M14 Malyutka) Carrier



<b>Crew</b>	4
<b>Max Speed</b>	Road 100 km/h; water 10 km/h
<b>Fuel Capacity</b>	290 liters
<b>Max Road Range</b>	750 km
<b>Combat Weight</b>	7,000 kg
<b>Length</b>	5.75 m
<b>Width</b>	2.35 m
<b>NBC System</b>	Yes
<b>Night Vision</b>	Yes

**NOTE:** The NATO name for Malyutka is AT-3a "Sagger."

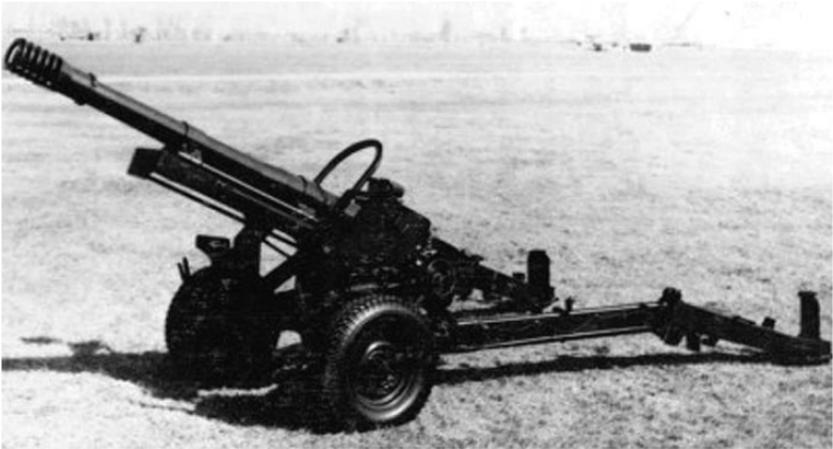
## 100-mm M1977 Misdrache



<b>Crew</b>	8
<b>Max Range</b>	OF-412 HE-FRAG projectile 20,700 m APC-T projectile 4,000 m HEAT projectile 2,200
<b>Conversion time/travel to firing mode</b>	60 seconds
<b>Combat Weight</b>	3,200 kg
<b>Length</b>	9.37 m
<b>Width</b>	2.24 m

**NOTE:** Ammunition fired by M1977 is identical to that used in the T-54/55 MBTs.

## 98-mm M93 Mountain Howitzer



<b>Crew</b>	8
<b>Ammunition</b>	Fin-stabilized, HEAT projectile
<b>Max Range</b>	10,800 m
<b>Rate of Fire</b>	6 rds/min
<b>Combat Weight</b>	1,500 kg
<b>Length</b>	4.25 m
<b>Width</b>	1.65 m
<b>Towing vehicle</b>	4x4 truck or horses

**NOTE:** If required, the weapon can be quickly disassembled into three loads, each of which can be loaded on a carriage towed by a horse.

## 76.2-mm M1984 Mountain Howitzer



<b>Crew</b>	7
<b>Ammunition</b>	HE, HEAT, smoke, M55
<b>Max Range</b>	HE 8,600 m; HEAT 1,000 m
<b>Rate of Fire</b>	25 rds in the first minute, 120 rds/hr
<b>Combat Weight</b>	722 kg
<b>Length</b>	3.10 m
<b>Width</b>	2.65 m
<b>Towing vehicle</b>	4x4 truck or horses
<b>Traveling to firing time</b>	From vehicle, 1 min; from packs, 6-8 mins

**NOTE:** If required, the weapon can be quickly disassembled into 8 pack animal loads.

## LUNA-M Rocket System



Caliber	544-mm
Crew	7
Warhead	HE
Max Range	67,000-68,000 m
Firing Preparation Time	15-30 minutes
Combat Weight	17,560 kg
Vehicle Length	10.69 m
Vehicle Width	2.8 m
Vehicle Speed (Maximum)	65 km/h
Vehicle Range	650 km

**Note:** The designation of the complete system is the 9k52 Luna-M, but the actual 8x8 wheeled launcher is designated the 9P113, which can launch up to 200 (FROG-7) rockets before requiring overhaul.

## 9K11 Malyutka ATGM system



<b>Type</b>	Wire-guided, manual command, line-of-sight system
<b>Launch Weight</b>	10.9 kg
<b>Length</b>	860 mm
<b>Diameter</b>	125 mm
<b>Warhead</b>	2.6 kg; HEAT, piezoelectric fuse
<b>Maximum Range</b>	3,000 m

**NOTE:** NATO name is Sagger; Romania uses MILAN 2T missile warheads on Malyutka-series missiles, which will normally be deployed on Romanian Army reconnaissance vehicles and infantry fighting vehicles.

## SS-1 SCUD B Missile System



<b>Type</b>	Short-range, road-mobile, liquid-propellant, single-warhead ballistic missiles
<b>Crew</b>	5
<b>Launch Sequence Time</b>	1 hour
<b>Launch Weight</b>	5,900 kg
<b>Missile Length</b>	11.25 m
<b>Missile Diameter</b>	0.88 m
<b>Warhead</b>	Nuclear, chemical, conventional HE
<b>Maximum Range</b>	300 km

**NOTE:** Carried on an 8-wheeled MAZ 543 P Tel vehicle (shown above). Missile is raised to vertical position prior to launch.

## AIR DEFENSE

### Twin 35-mm Gepard SPAAG



<b>Crew</b>	3
<b>Armament</b>	2 x 35-mm Oerlikon Contraves KDA cannon
<b>Range</b>	2,000-3,000 m
<b>Rate of Fire</b>	550 rds/min (per barrel)
<b>Max Speed</b>	65 km/h
<b>Fuel Capacity</b>	985 liters
<b>Max Road Range</b>	550 km (400 km cross-country)
<b>Combat Weight</b>	47,300 kg
<b>Length</b>	7.73 m
<b>Width</b>	3.37 m
<b>Surveillance Radar</b>	Yes
<b>NBC System</b>	Yes
<b>Night Vision</b>	Yes

## SA-2 GUIDELINE



Type	Two-stage, low-to-high altitude missile
Launch Weight	2,287 kg
Length	10.8 m
Diameter	0.50 m
Warhead	HE fragmentation w/proximity fuzing system
Maximum Range	34,000 m
Reload Time	12 mins

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



Function	Manportable surface-to-air missile system
Range	3.7 km
Guidance	IR
Warhead	HE

**NOTE:** SA-7b; STRELA-2M/A electronic block in seeker is miniaturized.

**RECOGNITION:** Manportable shoulder launched system; smoke signature at launch

## SA-9 GASKIN



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

## 12.7-mm Anti-Aircraft Gun



<b>Crew</b>	3
<b>Rate of Fire</b>	Practical: 50-100; cyclic: 540-600 rds/min
<b>Feed</b>	Fed from the left in belts of 50 rounds
<b>Combat Weight</b>	157 kg (system alone 34 kg)
<b>Length</b>	1,590 mm
<b>Width</b>	780 mm

**NOTE:** Similar to Russian 12.7-mm DShKM; can be mounted on either a tripod or two-wheeled carriage.

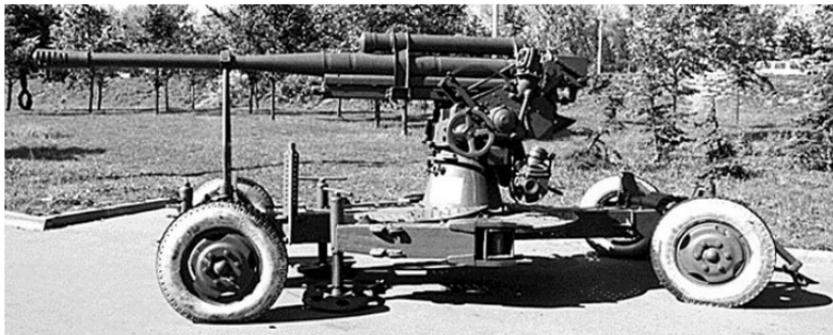
## 30-mm Romanian Twin AAG



<b>Operation</b>	Gas, fully automatic
<b>Rate of Fire</b>	With selection device: per barrel, 100-, 250 or 500 rds/min
<b>Max Range</b>	2,000 m
<b>Feed</b>	30-round box-type magazine
<b>Traverse</b>	360°
<b>Combat Weight</b>	3,460 kg
<b>Length</b>	6.40 m
<b>Width</b>	2.10 m

**NOTE:** Guns are similar, but 1944 has different muzzle brake. Many have been replaced by 100-mm KS-19

## 85-mm M1939/1944 (KS-12)



<b>Crew</b>	7
<b>Rate of Fire</b>	15-20 rds/min
<b>Max Horizontal Range</b>	15,650 m (M1944 18,000 m)
<b>Max Vertical Range</b>	10,500 m (M1944 11,600 m)
<b>Traverse</b>	360°
<b>Combat Weight</b>	4,300 kg (M1944 5,000 kg)
<b>Length</b>	8.3 m
<b>Width</b>	2.15 m

**NOTE:** Guns are similar, but 1944 has different muzzle brake. Many have been replaced by 100-mm KS-19

## 100-mm KS-19



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

## 57-mm S-60



<b>Crew</b>	7
<b>Maximum Range</b>	12,000 m (horizontal) 8,800 m (vertical)
<b>Rate of Fire</b>	100 - 120 rds/min
<b>Combat Weight</b>	4,500 kg
<b>Length</b>	8.6 m
<b>Width</b>	2.054 m
<b>Height</b>	2.46 m

## 14.5-mm ZPU-2 (Twin)



<b>Crew</b>	4
<b>Maximum Range</b>	8,000 m (horizontal) 5,000 m (vertical)
<b>Rate of Fire (Per Barrel)</b>	150- 600 rds/min
<b>Combat Weight</b>	1,810 kg
<b>Length</b>	4.53 m
<b>Width</b>	1.72 m
<b>Height</b>	2.13 m

## 14.5-mm ZPU-4 (Quad)



<b>Crew</b>	5
<b>Maximum Range</b>	8,000 m (horizontal) 5,000 m (vertical)
<b>Rate of Fire (Per Barrel)</b>	150 - 600 rds/min
<b>Combat Weight</b>	1,810 kg
<b>Length</b>	4.53 m
<b>Width</b>	1.72 m
<b>Height</b>	2.13 m

## AVIATION

### Alouette III



<b>Type</b>	Turbine-driven general purpose helicopter
<b>Accommodation</b>	Pilot plus 6
<b>Armament</b>	Assorted guns, missiles, or rockets
<b>Maximum Speed</b>	113 knots/h
<b>Maximum Range</b>	340 knots
<b>Maximum Take-off Weight</b>	2,200 kg
<b>Length</b>	12.84 m

**NOTE:** The IAR-316B is the same as the SA-316, but is built under licence in Romania.

## IAR-330L PUMA (SOCAT)



<b>Type</b>	Medium-sized multipurpose helicopter
<b>Crew/Passengers</b>	2/20
<b>Armament</b>	Wide assortment, to include side-firing 20-mm cannon, 2 or 4 x 7.62-mm machineguns, bombs and missiles
<b>Max Speed</b>	142 km/h
<b>Range</b>	550 km
<b>Payload</b>	3,759 kg
<b>Length</b>	18.5 m
<b>Width</b>	3.5 m
<b>Height</b>	5.14 m

**NOTE:** The Romanian Army has Upgraded many SA-330 PUMA helicopters with the SOCAT avionics/armament system, making it capable of providing anti-armor, anti-personnel, and close air support, battlefield air interdiction, armed reconnaissance, air defence and assault escort missions, as well as day and night search and rescue.

## Mi-8P (Hip-C)



<b>Type</b>	Twin-turbine multipurpose helicopter
<b>Crew/Passengers</b>	2/28-32
<b>Armament</b>	Assorted machineguns, bombs and missiles
<b>Max Speed</b>	260 km/h
<b>Range</b>	425 km (with 24 passengers)
<b>Payload</b>	4,000 kg
<b>Length</b>	25.24 m
<b>Width</b>	2.50 m
<b>Height</b>	5.65 m

## MiG-21 LANCER



<b>Type</b>	Ground attack aircraft
<b>Crew</b>	1
<b>Armament</b>	4 x K-13 Python 3 air-to-air missiles; various guns, missiles, and rockets
<b>Maximum Speed</b>	M2.05 (2,175 km/h)
<b>Combat Radius</b>	370 km
<b>Length</b>	15.76 m
<b>Take-Off Weight</b>	9,400 kg

**NOTE:** Romanian government has upgraded more than 100 MiG-21M and MiG-21UM aircraft to Lancer A (Ground Attack), Lancer B (Combat Trainer) and Lancer C (Interceptor) aircraft.

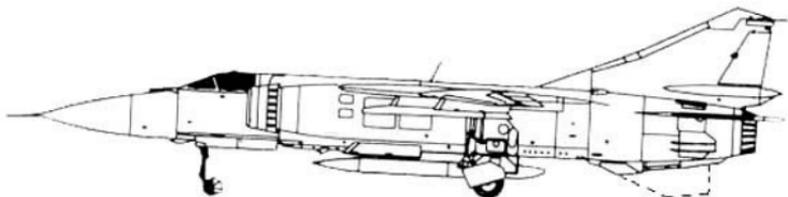
## MiG-29 FULCRUM



<b>Type</b>	Multi-role fighter, interceptor
<b>Crew</b>	1
<b>Armament</b>	Assorted guns, missiles, and rockets; previously capable of nuclear weapons carriage, now prohibited by CFE treaty.
<b>Maximum Speed</b>	M2.3 (2,445 km/h)
<b>Max Range</b>	2,100 km (with underbelly auxiliary tank)
<b>Length</b>	17.32 m
<b>Height</b>	4.73 m
<b>Weight</b>	15,240 kg

**NOTE:** The MiG-29 "Fulcrum-A" version flown by Romania has downgraded IFF. Shown above is a Romanian MiG-29 Sniper upgrade.

## MiG-23MF FLOGGER-B



<b>Type</b>	Multi-role fighter, interceptor
<b>Crew</b>	1
<b>Armament</b>	23-mm twin gun; 2 pylons for radar-guided air-to-air missiles, 20 x 80-mm rockets; use of twin launchers under air intake ducts permits carriage of 4 x R-60 missiles, plus 2 x R-23 underwing pylons.
<b>Maximum Speed</b>	M2.35 (2,500 km/h)
<b>Max Range</b>	2,820 km (with three external tanks)
<b>Length</b>	16.71 m
<b>Height</b>	4.82 m
<b>Max Take-off Weight</b>	17,800 kg

**Note:** Romania also flies the MiG-23UB combat trainer.

## MiG-17 FRESCO



<b>Type</b>	Single seat fighter, bomber
<b>Armament</b>	2 or 3 x 23-mm cannon; assorted rockets and bombs
<b>Maximum Speed</b>	1,145 km/h
<b>Max Range</b>	1,400 km (with external tanks)
<b>Length</b>	11.26 m
<b>Height</b>	3.80 m
<b>Max Take-off Weight</b>	6,069 kg

## IAR-99 Little Hawk



<b>Type</b>	Advanced jet trainer/light attack jet
<b>Armament</b>	Assorted rockets, missiles, and bombs
<b>Maximum Speed</b>	865 km/h)
<b>Max Range</b>	1,100 km (with internal fuel)
<b>Length</b>	11.01 m
<b>Height</b>	3.90 m
<b>Max Take-off Weight</b>	5,480 kg

## An-2 Transport Plane



<b>Type</b>	Single-engine, general purpose biplane
<b>Crew</b>	1 (easily convertible to carry passengers or transport)
<b>Payload</b>	1,500 kg
<b>Max Speed</b>	253 km/h)
<b>Range</b>	905 km
<b>Length</b>	12.95 m
<b>Height</b>	4.20 m
<b>Max Take-off Weight</b>	5,500 kg

## An-24/26 Transport Plane



Type	Twin-turboprop short-range transport
Crew	3 (plus up to 52 passengers)
Payload	1,500 kg
Max Speed	450 km/h
Max Range (with max fuel)	2,400 km
Length	23.53 m
Height	8.32 m
Max Take-off Weight	21,000 kg

**NOTE:** Designed to operate from airfields of limited size, with paved or natural runways, and can be fitted with rocket-assisted take-off units to allow operation with full load of cargo. The An-26 is a similar version for specialized freight-carrying.

## An-30 Surveillance



<b>Type</b>	Twin-turboprop aerial survey aircraft
<b>Crew</b>	5 (pilot, co-pilot, flight engineer, radio operator, and navigator) plus 2 photographers/surveyors if required
<b>Max Speed</b>	540 km/h
<b>Max Range (with max fuel)</b>	2,630 km
<b>Length</b>	24.26 m
<b>Height</b>	8.32 m
<b>Max Take-off Weight</b>	23,000 kg

**NOTE:** Developed from An-26 transport plane.

## NAVY

### KILO Class Submarine



<b>Type</b>	Fast Attack Craft
<b>Complement</b>	52 (13 officers)
<b>Armament</b>	Total of 18 weapons; SLCM missiles; SA-N-8 portable launcher; 6x533-mm torpedo tubes
<b>Max Speed (knots)</b>	10 surfaced; 17 submerged
<b>Range</b>	6,000 n miles at 7 knots surface; 400 at 3 knots submerged
<b>Displacement (t)</b>	2,325 surfaced; 3,076 submerged
<b>LOA/Beam/Draft (m)</b>	72.6 x 9.9 x 6.6

## MARASESTI Class Destroyer



<b>Complement</b>	270 (25 officers)
<b>Armament</b>	4 x twin SSM (P-21 STYX) launchers; 24 x 533-mm (RBU-6000) torpedo tubes; 2 x 76-mm AK-726 twin guns; 4 x 30-mm AK-630 gatling guns
<b>Aircraft</b>	2 x Alouette III helicopters
<b>Max Speed (knots)</b>	27)
<b>Max Range</b>	2,630 km
<b>Displacement (t)</b>	5,790 (full)
<b>LOA/Beam/Draft (m)</b>	144.6 x 14.8 x 7
<b>NOTE:</b>	Formerly known as the <i>Muntenia</i> , this is the first Romanian-built destroyer.

## ZBORUL Class Tarantul I



<b>Type</b>	Fast Attack Craft
<b>Complement</b>	46 (6 officers)
<b>Armament</b>	4 x P-21 STYX twin-tube SSMs; 4 x SWITCHBLADE quad-tubes; 1 x GRAIL quad-arm SAM; 76-mm AK-176 gun; 2 x 30-mm AK-630 gatling guns
<b>Max Speed (knots)</b>	38
<b>Range</b>	2,000 n miles at 20 knots
<b>Displacement (t)</b>	455 (full)
<b>LOA/Beam/Draft (m)</b>	56.1 x 10.2 x 2.5

## TETAL Class



<b>Type</b>	Frigate
<b>Complement</b>	95
<b>Armament</b>	2 x 533-mm torpedo tubes; 2 x RBU 2500 16-tube launchers; 2 x twin 76-mm AK-276 guns; 2 x 30-mm AK-630 Gatling guns
<b>Max Speed (knots)</b>	24
<b>Displacement (t)</b>	1,440 (full)
<b>LOA/Beam/Draft (m)</b>	92.4 x 11.7 x 3.1

## OSA I



<b>Type</b>	Fast attack craft- missile
<b>Complement</b>	30
<b>Armament</b>	4 x STYX SSM launchers; 4 x 30-mm guns(2 twin)
<b>Max Speed (knots)</b>	35
<b>Range</b>	400 n miles at 34 knots
<b>Displacement (t)</b>	213 (full)
<b>LOA/Beam/Draft (m)</b>	38.6 x 7.6 x 2.7

## NALUKA Class (EPITROP)



<b>Type</b>	Fast attack craft- torpedo
<b>Complement</b>	22 (4 officers)
<b>Armament</b>	4 x 533-mm anti-surface torpedo tubes; 4 x 30-mm (2 twin) AK 230 guns
<b>Max Speed (knots)</b>	36
<b>Range</b>	500 n miles at 35 knots
<b>Displacement (t)</b>	215 (full)
<b>LOA/Beam/Draft (m)</b>	36.8 x 7.6 x 1.8

## NALUCA Class



<b>Type</b>	Fast attack craft- torpedo
<b>Complement</b>	22 (4 officers)
<b>Armament</b>	4 x 533-mm anti-surface torpedo tubes; 4 x 30-mm (2 twin) AK 230 guns
<b>Max Speed (knots)</b>	36
<b>Range</b>	500 n miles at 35 knots
<b>Displacement (t)</b>	215 (full)
<b>LOA/Beam/Draft (m)</b>	36.8 x 7.6 x 1.8

**NOTE:** Based on an OSA Class hull with torpedo tubes in lieu of SSMs.

## HUCHUAN Class



<b>Type</b>	Fast attack craft/hydrofoil- torpedo
<b>Complement</b>	11
<b>Armament</b>	2 x 533-mm anti-surface torpedo tubes; 4 x 14.5-mm (2 twin) machine guns
<b>Max Speed (knots)</b>	50
<b>Range</b>	500 n miles at 30 knots
<b>Displacement (t)</b>	45 (full)
<b>LOA/Beam/Draft (m)</b>	21.8 x 6.3 x 1

## CORSAR Class



<b>Type</b>	Minelayer
<b>Complement</b>	75
<b>Armament</b>	Mortars, mines (200); 1 x 57-mm gun; 4 x 30-mm (2 twin) AK 230; 8 x 14.5-mm (2 quad) machine guns
<b>Max Speed (knots)</b>	19
<b>Displacement (t)</b>	1,450 (full)
<b>LOA/Beam/Draft (m)</b>	79 x 10.6 x 3.6

**NOTE:** Romania has two CORSAR minelayers; the *Vice Admiral Ioan Murgescu* has a helicopter platform for one IAR-316 Alouette III; the *Vice Admiral Constantin Balescu* (shown) has a large crane on the after deck.

## Musca



<b>Type</b>	Coastal minesweeper
<b>Complement</b>	60
<b>Armament</b>	2 x 533-mm anti-surface torpedo tubes; 4 x 14.5-mm (2 twin) machine guns
<b>Max Speed (knots)</b>	17
<b>Displacement (t)</b>	790 (full)
<b>LOA/Beam/Draft (m)</b>	60.8 x 9.5 x 2.8

## RIVER PATROL CRAFT

### IC Bratianu



**Type**

River monitor

**Armament**

2 x 100-mm tank turrets; 4x30-mm (2 twin) guns;  
4 x 14.5-mm (2 twin) guns;  
2 x 122-mm BM-21 rocket launchers

**Max Speed (knots)**

18

**Displacement (t)**

575 (full)

**LOA/Beam/Draft (m)**

528 x 9 x 1.7

## VB-76



<b>Type</b>	Armored Patrol Boat
<b>Complement</b>	25
<b>Armament</b>	1 x 76-mm machine gun 4 x 14.5-mm (2 twin) guns; 1 x 81-mm mortar
<b>Max Speed (knots)</b>	17
<b>Displacement (t)</b>	127 (full)
<b>LOA/Beam/Draft (m)</b>	32.4 x 4.8 x 0.9

## Brutar



<b>Type</b>	Armored Patrol Boat
<b>Armament</b>	1 x 100-mm tank turret; 2 x 30-mm (twin) gun; 10 x 14.5-mm (2 quad, 2 single) guns; 2 x 122-mm BM-21 rocket launchers
<b>Max Speed (knots)</b>	16
<b>Displacement (t)</b>	410 (full)
<b>LOA/Beam/Draft (m)</b>	45.7 x 8 x 1.5

## VD-141



<b>Type</b>	Minesweeping Boat
<b>Complement</b>	25
<b>Armament</b>	4 x 14.5-mm (2 twin) guns; Minelaying capabilities
<b>Max Speed (knots)</b>	13
<b>Displacement (t)</b>	97 (full)
<b>LOA/Beam/Draft (m)</b>	26 x 4 x 0.8



# APPENDIX B: International Time Zones



## Coordinated Universal Time (UTC)

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

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

<b>Country</b>	<b>UTC</b>	<b>Eastern</b>	<b>Central</b>	<b>Mountain</b>	<b>Pacific</b>
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

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

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

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

<b>Country</b>	<b>UTC</b>	<b>Eastern</b>	<b>Central</b>	<b>Mountain</b>	<b>Pacific</b>
Rwanda	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Saba	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Samoa	-11.0 H	-6.0 H	-5.0 H	-4.0 H	-3.0 H
San Marino	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Sao Tome	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Saudi Arabia	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Senegal	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Seychelles Islands	+4.0 H	+9.0 H	+10.0 H	+11.0 H	+12.0 H
Sierra Leone	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Singapore	+8.0 H	+13.0 H	+14.0 H	+15.0 H	+16.0 H
Slovakia	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Slovenia	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Solomon Islands	+11.0 H	+16.0 H	+17.0 H	+18.0 H	+19.0 H
Somalia	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
South Africa	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Spain	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Sri Lanka	+5.5 H	+10.5 H	+11.5 H	+12.5 H	+13.5 H
St. Lucia	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
St. Maarten	-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

<b>Country</b>	<b>UTC</b>	<b>Eastern</b>	<b>Central</b>	<b>Mountain</b>	<b>Pacific</b>
Turkey	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
Turkmenistan	+5.0 H	+10.0 H	+11.0 H	+12.0 H	+13.0 H
Turks and Caicos	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
Tuvalu	+12.0 H	+17.0 H	+18.0 H	+19.0 H	+20.0 H
Uganda	+3.0 H	+8.0 H	+9.0 H	+10.0 H	+11.0 H
Ukraine	+2.0 H	+7.0 H	+8.0 H	+9.0 H	+10.0 H
United Arab Emirates	+4.0 H	+9.0 H	+10.0 H	+11.0 H	+12.0 H
United Kingdom	+0.0 H	+5.0 H	+6.0 H	+7.0 H	+8.0 H
Uruguay	-3.0 H	+2.0 H	+3.0 H	+4.0 H	+5.0 H
USA Eastern	-5.0 H	+0.0 H	+1.0 H	+2.0 H	+3.0 H
USA Central	-6.0 H	-1.0 H	+0.0 H	+1.0 H	+2.0 H
USA Mountain	-7.0 H	-2.0 H	-1.0 H	+0.0 H	+1.0 H
USA Western	-8.0 H	-3.0 H	-2.0 H	-1.0 H	+0.0 H
USA Alaska	-9.0 H	-4.0 H	-3.0 H	-2.0 H	-1.0 H
USA Hawaii	-10.0 H	-5.0 H	-4.0 H	-3.0 H	-2.0 H
Uzbekistan	+5.0 H	+10.0 H	+11.0 H	+12.0 H	+13.0 H
Vanuatu	+11.0 H	+16.0 H	+17.0 H	+18.0 H	+19.0 H
Vatican City	+1.0 H	+6.0 H	+7.0 H	+8.0 H	+9.0 H
Venezuela	-4.0 H	+1.0 H	+2.0 H	+3.0 H	+4.0 H
Vietnam	+7.0 H	+12.0 H	+13.0 H	+14.0 H	+15.0 H
Wallis & Futuna 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

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## APPENDIX C: Conversion Charts

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### 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

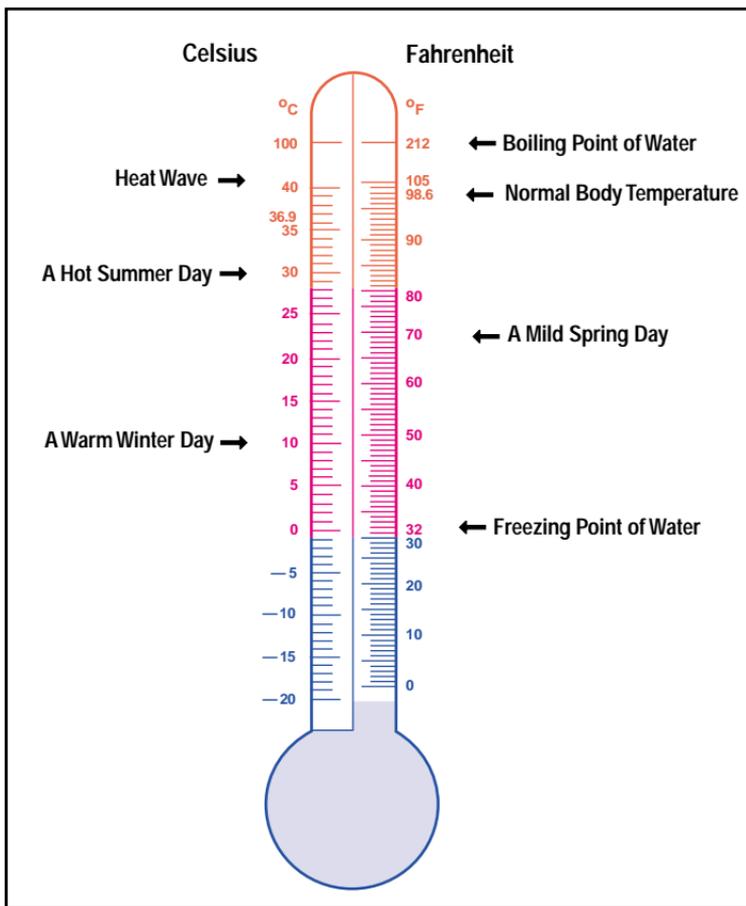
<b>Units of Volume</b>	<b>Multiply by</b>	<b>To find</b>
Milliliters	0.20	Teaspoons
Milliliters	0.06	Tablespoons
Milliliters	0.03	Fluid Ounces
Liters	4.23	Cups
Liters	2.12	Pints
Liters	1.06	Quarts
Liters	0.26	Gallons
Cubic Meters	35.32	Cubic Feet
Cubic Meters	1.35	Cubic Yards
Teaspoons	4.93	Milliliters
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



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## **APPENDIX D: Holidays**

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1-2 January	New Year's Day
6 January	Epiphany
March/April (varies)	Easter
1 May	Labor Day
23 August	Liberation Day
1 December (1990)	National Day of Romania



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## APPENDIX E: Language

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### Key Phrases

<b>English</b>	<b>Romanian</b>	<b>Pronunciation</b>
Good morning	Buna diminieta	BOO-nah dee-meen-YAH-tsay
Good afternoon	Buna ziua	BOO-nah ZEE-wah
Good evening	Buna seara	BOO-nah se-AH-rah
Good night	Noapte buna	no-WAHP-teh BOO-nah
Goodbye	La revedere	Lah reh-veh-DEH-reh
Please	Va rog	vah ROHG
Thank you	Multimesc	moolt-soo-MESK
You're welcome	Cu placere	koo plah-CHEH-reh
I am honored	Am onoare	ahm ohn-WAH-reh
Cheers	Noroc	noh-ROHK

### Foods and Beverages

<b>English</b>	<b>Romanian</b>	<b>Pronunciation</b>
water	ap	AH-pah
soda	cola	KOH-la
beer	bere	BEH-reh
wine	vin	veen
salt	sare	SAH-reh
pepper	piper	PEE-per
bread	pâine	POY-neh
cheese	brânz	BRIN-zah
salad	salat	sah-LAH-teh
meat	carne	KAR-neh
beef	carne de vac	KAR-neh deh VAH-keh
pork	porc	pork

## Numbers

<b>English</b>	<b>Romanian</b>	<b>Pronunciation</b>
one	unu	OO-noo
two	doi	doy
three	trei	tray
four	patru	PAH-troo
five	cinci	cheench
six	sase	SHAH-seh
seven	sapte	SHAP-teh
eight	opt	OHPT
nine	noua	NOH-wah
ten	zece	ZEH-cheh
100	o sut	o SOO-teh
1,000	o mie	o MEE-eh

## 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



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## **APPENDIX G:**

### **Deployed Personnel's Guide to Health Maintenance**

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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

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

The work/rest times and fluid replacement volumes will sustain performance and hydration for at least 4 hours of work in the specific heat category. Individual water needs will vary +/- (plus/minus) 1/4 qt/hr.

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

**Caution:** Hourly fluid intake should not exceed 1 ½ quarts. Daily intake should not exceed 12 quarts. Note: MOPP gear adds 10° to WBGT Index.

### *Food*

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

### *Human Waste*

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

## Cold Weather

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

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

WIND SPEED		COOLING POWER OF WIND EXPRESSED AS "EQUIVALENT CHILL TEMPERATURE"																				
KNOTS	MPH	TEMPERATURE (°F)																				
CALM	CALM	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	-55	-60
		EQUIVALENT CHILL TEMPERATURE																				
3 - 6	5	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	-55	-60	-70
7 - 10	10	30	20	15	10	5	0	-10	-15	-20	-25	-35	-40	-45	-50	-60	-65	-70	-75	-80	-90	-95
11 - 15	15	25	15	10	0	-5	-10	-20	-25	-30	-40	-45	-50	-60	-65	-70	-80	-85	-90	-100	-105	-110
16 - 19	20	20	10	5	0	-10	-15	-25	-30	-35	-45	-50	-60	-65	-75	-80	-85	-95	-100	-110	-115	-120
20 - 23	25	15	10	0	-5	-15	-20	-30	-35	-45	-50	-60	-65	-75	-80	-90	-95	-105	-110	-120	-125	-135
24 - 28	30	10	5	0	-10	-20	-25	-30	-40	-50	-55	-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



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## APPENDIX H: Individual Protective Measures

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### 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.

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## APPENDIX I: Dangerous Animals and Plants

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### *Sand or Horned Viper*

#### **Description:**

Adult length usually 0.6 to 0.7 meter, maximum of 0.9 meter. Background color usually ash gray in males and gray brown or brick-red in females, but much variation. Belly yellow, brown or pink, with



small dark spots or blotches. Body stout, usually with prominent black or brown zigzag dorsal stripe. Tip of tail pink or red. Distinctive snout, with strongly upturned, horn-like appendage.

#### **Habitat:**

Found in various habitats from lower plains to elevations up to 2,500 meters, most often at moderately high elevations in dry terrain with scattered bushes. Seeks gravelly rock hills with slopes facing the sun. Frequently found in open areas with few trees and bushes or in rock formations near cultivated fields.

#### **Activity and behavioral patterns:**

Primarily terrestrial, although occasionally climbs into bushes. Most active in the evening, except in colder weather. Species is generally sluggish and slow-moving. Not very aggressive. When annoyed, hisses loudly but usually does not bite unless disturbance continues, then will strike and bite quickly.

**Venom's effects:**

Extremely potent hemotoxin. Symptoms may include progressive swelling, lymphedema, shortness of breath, marked limb stiffness, nausea, local hemorrhage, and internal bleeding. Fatalities recorded. Fangs unusually long: may be up to 12 millimeters.

***European Viper,  
Common Adder*****Description:**

Adult length usually 0.5 to 0.6 meter; maximum of 0.9 meter. Stout snake with slightly flattened body. Background color varies by geographic location.



Dorsal color varies from gray to copper to brown or uniformly black with dark, heavy zig-zag strip pattern on back. Belly gray, gray brown, or black; sometimes marked with white spots. Tip of tail yellow, orange, or reddish orange. Snout broadly rounded but not clearly upturned as in some other European vipers. May have X-shaped or inverted V-shaped mark on head.

**Habitat:**

Found in rocky or bushy hillsides, open fields, woods, shady areas, moors, swamps, marshes, and bogs. In northern parts of range, found mainly at sea level; may be found up to 2,700 meters in lakes and rivers. Can tolerate coldest environment of any viper species.

**Activity and behavioral patterns:**

Active during the day in colder months; largely nocturnal during warmer months. Generally not vicious or aggressive. Tends to freeze when danger is present; however, easily alarmed and bites if threatened or stepped on. Usually lives in colonies near suitable hibernation sites.

**Venom's effects:**

Hemotoxic; also some neurotoxic activity. Causes sharp pain or severe burning at site of bite, followed by swelling and inflammation of lymph system. Victim usually develops nausea, headaches, vomiting, chest pain, and labored breathing. Fatalities reported.

***Steppe viper,  
Orsini's viper*****Description:**

Adult length usually 0.4 to 0.5 meter; maximum of 0.65 meter.

Background color gray, yellow, green, or light brown. Belly usually light or dark gray, sometimes with yellow

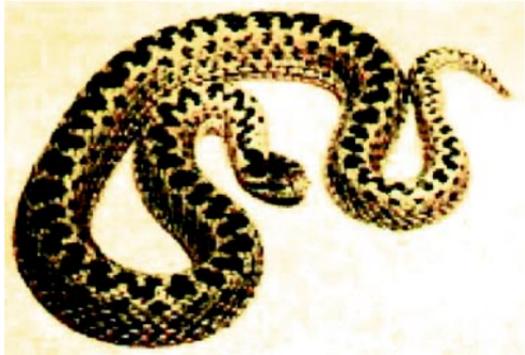
markings. Completely black specimens reported. Dark, wavy, zig-zag line with black edges down center of back from head to tail; may be discontinuous. Head oval, narrower than that of other vipers; distinct from neck. Snout rounded, slightly upturned. Dark line extending from each eye to corner of mouth.

**Habitat:**

Found in dry plains, flatlands with few trees or bushes; more common at higher elevations. Also found on wooded hillsides in mountainous regions. Generally seeks open areas near dry clay or loamy soil. Hides in rodent dens and small animal burrows.

**Activity and behavioral patterns:**

Primarily diurnal, but may be nocturnal during hot summers months. More active than other vipers; can move rapidly. Hibernates during winter. Not aggressive; avoids human confrontation. Seldom bites, even when bothered; will bite if harassed, stepped on, or handled roughly.



## **Arthropods**

### ***Scorpions***

Although there are several species of scorpion encountered in the region that are capable of inflicting a painful sting, none of these species are considered 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.

### ***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, only the widow spiders are believed to be life-threatening.



## ***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 noxious fluid that can cause severe blistering on contact; some can squirt this fluid at least 2 feet.



## **Plants**

### ***Cohosh/Baneberry***

#### **Other names:**

White, black, and red cohosh/baneberry, doll's eyes, grapewort, snake-berry, necklace weed.

#### **Mechanisms of toxicity:**

All parts contain an innocuous glycoside that is metabolized to form the aglycone protoanemonin, a volatile, irritant oil. As few as six berries have caused severe symptoms (gastroenteritis, hematuria, and occasional circulatory collapse) for many hours. Handling can cause irritant dermatitis with blistering, severe eye irritation; ingestion can result in death.

#### **Comments:**

Perennial herbs having a berry-like fruit found in fields, deciduous forests, and roadsides.



## *Horse Chestnut*

### **Other name:**

Buckeye

### **Mechanisms of toxicity:**

The saponin aesculin (a hydroxy derivative of coumarin) is found in leaves, bark, and seeds. Some individuals have eaten the ripened nuts after roasting and treating them in lime water (absorption of the toxins is inefficient), but children have died after ingesting the nuts or drinking tea made from the leaves. Bruised branches used as a fish toxin. Honey made from the flowers is toxic.



### **Comments:**

There are 13 species of *Aesculus*; large trees with showy flowers and seed pods, which may be smooth and leathery, or warty. Smaller trees or shrubs. The brown nuts are held in a spiny green capsule. Bark has been used as a yellow dye.

## *Annual/French Mercury*

### **No Photograph Available**

### **Other names:**

Dog's Mercury

### **Mechanisms of toxicity:**

Native to Europe; entire plant is toxic. Has been mistaken for edible greens. Emetic and purgative. Has proven fatal.

### **Comments:**

Dye source; carpeting rhizome herb, characteristic of disturbed woodland.

## *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 from the plant being mistaken for parsley and the rhizomes and roots for turnips or radishes.



### **Comments:**

Grows as 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:**

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

***Lily of the Valley*****Mechanisms of toxicity:**

Contains more than 20 cardiac glycosides (e.g. convallatoxin). Quickly fatal potential. Has caused death; children are attracted to its flowers and bright berries; poisons have occurred from drinking water from a vase in which flowers were placed. Has been mistaken for wild garlic and made into soup. Used as an arrow poison in Africa.

**Comments:**

Dried roots made into many medicinals, especially in Russia.

***Chervil*****No Photograph Available****Mechanisms of toxicity:**

Poisoning similar to hemlock and fool's parsley; piperidine alkaloids (e.g. coniine, which exhibits nicotinic activity and has a curare-like effect).

**Comments:**

Drying of the plant results in decreased toxicity. Poisoning has occurred by mistaking the plant for parsley.

## *Spurge Laurel*

### **Other names:**

February daphne, mezereon.

### **Mechanisms of toxicity:**

Bark, leaves, and fruit contain toxic agents. Entire plant is toxic. Resin is acrid; has been used in the past as pepper substitute, with fatal consequences. Vesicular dermatitis when skin contact is made (extract used by beggars to induce skin lesions to arouse pity).

### **Comments:**

A very dangerous ornamental. A folk remedy for many symptoms (drowsy, neuralgia, snakebite, etc.).



## *Christmas Rose*

### **Other names:**

Hellebore, Bear's Foot, Stinking Helleborus, Green Hellebore.

### **Mechanisms of toxicity:**

Ancient medicinal, reportedly used as a chemical weapon hundreds of years BC. Alkaloids are toxic and have a burning taste. The rootstocks and leaves have cardiac and saponin glycosides and protoanemonin as the main toxic elements.

### **Comments:**

The hellebores are native to Europe but are naturalized in many areas.



## *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." In particular, 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. Jimsonweed can be confused with Angel's trumpet.

## *Burn Bean*

### **No Photograph Available**

### **Other names**

Colorines, mescal bean, red hots, necklace pod sophora, silverbush, pagoda tree.

### **Mechanisms of toxicity:**

Dark to bright red beans in woody pods are hallucinogenic. Seeds and flowers are very poisonous, causing convulsions, death. One seed can kill a child. Cytisine acts like a nicotinic ganglionic stimulation agent.

### **Comments:**

Fruit is source of a yellow dye. Dried flowers are sold as medicinal in Indonesia; used for bleeding problems.

## ***Golden chain/rain***

### **Mechanisms of toxicity:**

All parts of this species are poisonous. Beans are cooked for food (boiled with several changes of water) in the tropics. Cytisine is the toxic principle, particularly concentrated in the seeds and bark. Excreted in cow's milk — poisoning may occur after milk ingestion. Has proven fatal.



### **Comments:**

Cultivated ornamental trees and shrubs with timber as hard as ebony. Native to southern Europe.

## ***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 kera-

toconjunctivitis; can blind. Some contain urticating hairs (skin contact breaks off ends and toxic chemicals are injected). The caper spurge has killed those who mistook the fruit for capers. The Mexican fire plant was known for having medicinal properties in the first century and has killed children. Red spurge causes dermatitis. The pencil cactus has an abundant, white, acrid sap extremely irritating to the skin; has caused temporary blindness when accidentally splashed in the eyes, and has killed as a result of severe gastroenteritis after ingestion.

**Comments:**

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

***Spindle Tree***

**Other names:**

Burning bush, Wahoo.

**Mechanisms of toxicity:**

Spindle tree is the most toxic member of the genus. The flowers are yellowish-green; the pink (or orange-red) drupes are enticing but have phyllorhodin, several cardiac glycosides, and other unknown substances as the toxic principles, which result in symptoms 10-12 hours after ingestion - bloody diarrhea, nausea and vomiting, fever, hallucinations, somnolence, eventual coma and seizures.



**Comments:**

Deciduous or evergreen shrubs or trees; fruit a 3-5-valved, brightly colored capsule upon opening exposes scarlet to orange seeds, which are bird-dispersed. Until further data is available, the other species of this group should be considered toxic.

***Belladonna*****Other Name:**

Nightshade

**Mechanisms of toxicity:**

Berries, leaves, and roots contain tropane alkaloids that can cause death from anticholinergic poisoning.

**Comments:**

Perennial plants to 3 feet high. Native to Eurasia and North Africa.

***Herb Paris*****No Photograph Available****Mechanisms of toxicity:**

Narcotic in large doses, producing abdominal pain, delirium, seizures; has caused fatalities in children.

**Comments:**

Common in Europe.

***Whorled Solomon's Seal*****No Photograph Available****Mechanisms of toxicity:**

Although not known as a highly toxic group, genus contains saponins, volatile oils, and tannic acid. Dermatitis is the most common symptom after handling or eating. Fruits are toxic (saponins), similar to herb Paris. Ingestion results in vomiting, oral pain, and diarrhea.

## *Heliotrope*

### **Other names:**

Cherry pie, scorpion's tail, Indian heliotrope.

### **Mechanisms of toxicity:**

Contains pyrrolizidine alkaloids. Cause of large epidemics (Afghanistan, India) of illness following ingestion of bread made with flour contaminated with members of this genus. The pathologic effects (Budd-Chiari syndrome) take weeks to months, and death comes slowly over years. Chronic copper poisoning has occurred associated with this plant.



### **Comments:**

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

## *Snake's Head*

### **No Photograph Available**

### **Other names:**

Guinea flower, Crown imperial.

### **Mechanisms of toxicity:**

Many contain veratrum alkaloids, used in some areas as medicinals.

### **Comments:**

This genus has 100 species from western Europe and the Mediterranean to eastern Asia, but only a few have been clearly implicated as an origin of dermatitis.

## *Coffeeberry*

### **Other names:**

Alder buckthorn, common buckthorn, cascara.

### **Mechanisms of toxicity:**

The fresh bark is recognized as a particularly strong laxative. There are reports of deaths in children who ingested berries.



### **Comments:**

Cascara bark is source of American cascara. Of low relative toxicity, requires chronic use to result in chronic diarrhea and/or melanin pigmentation of the mucous membranes of the colon. Freshly prepared cascara products contain anthrones and can lead to severe vomiting and intestinal cramping. The bark should be stored for at least a year before use or detoxified by heating (in air) to reduce the presence of anthrones.

## *Black Nightshade*

### **Other names:**

Deadly nightshade, common nightshade, horse nettle, bittersweet, Jerusalem cherry, nipple fruit, quena, wild tomato, apple of Sodom, white-edged nightshade.



### **Mechanisms of toxicity:**

The fruit of the Jerusalem cherry is a black berry; the fully ripe berries are eaten; unripe berries contain solanine alkaloids, which can cause gastroenteritis, weakness, circulatory depression. Can kill

**Comments:**

Approximately 2,000 species of herbs, vines, shrubs covered with small star-shaped hairs. Perfect white, yellow, or blue flowers. Berries have dry or juicy pulp and several seeds.

***Cow Parsnip*****Other names:**

Wild rhubarb, Giant hogweed.

**Mechanisms of toxicity:**

Many species within this genus contain furocoumarins; roots and rind have phototoxic sap resulting in acute bullous dermatitis a few hours to two days after contact if then exposed to the sun, followed by pigmentation (may take months to years to disappear).

***Black Henbane*****No Photograph Available****Other names:**

Insane root, fetid nightshade.

**Mechanisms of toxicity:**

Old well-known medicinal and deadly poison (hyoscyamine, atropine) with many uses in many cultures. Tropicine alkaloids in the seeds (in a pod); has resulted in death; dermatitis (low risk).

**Comments:**

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

## ***Poison Hemlock***

### **Other names:**

Spotted hemlock,  
fool's parsley

### **Mechanisms of toxicity:**

Quickly fatal potential. The leaves and unripe fruits have the piperide alkaloids coniine and

coniceine with highest concentrations in the seeds and roots. Drying of the plant results in decreased toxicity. One mouthful of the root has caused death after a period of nervousness (within 30 minutes), nausea and vomiting, diarrhea, and respiratory failure.

### **Comments:**

A biennial herb that resembles a carrot; smooth, spotted stems; foul odor. Naturalized in waste and marshy areas; native in temperate Eurasia.

## ***English Yew***

### **Other names:**

Ground hemlock, American yew, Japanese yew.

### **Mechanisms of toxicity:**

Taxine A and B, classed as steroid alkaloids, are present in all plant parts except the aril. A single

chewed seed is deadly. An hour after ingestion, nausea, dizziness, and abdominal pain begin. This is followed by reddening of the lips, dilatation of the pupils, shallow breathing, tachycardia, and coma. Then the pulse slows, blood pressure drops, and death occurs through respiratory paralysis. No proven treatment exists. Emptying the stomach hours after ingestion may be helpful as leaves may not pass through the GI tract



expeditiously. Various clinical measures (circulatory stimulants, artificial respiration, cardiac pacemaker) have not prevented suicide deaths.

**Comments:**

An evergreen shrub or small tree bearing a characteristic fleshy, red, sweet-tasting aril with a single green to black, partly exposed, hard-shelled seed within. In North America, the Japanese yew, the toxicity of which may exceed that of the English yew, has repeatedly caused fatal animal poisonings. Was once known as the tree of death.

***Poison Ivy***

**Other names:**

Manzanillo, scarlet rhus, Chinese or Japanese lacquer tree, easter, or western poison oak, poison sumac, Japanese tallow or wax tree, sumac



**Mechanisms of toxicity:**

All contain allergenic nonvolatile oils known as urushiols in the resin canals; these oils are highly sensitizing (delayed, type IV sensitivity) for some individuals

**Comments:**

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

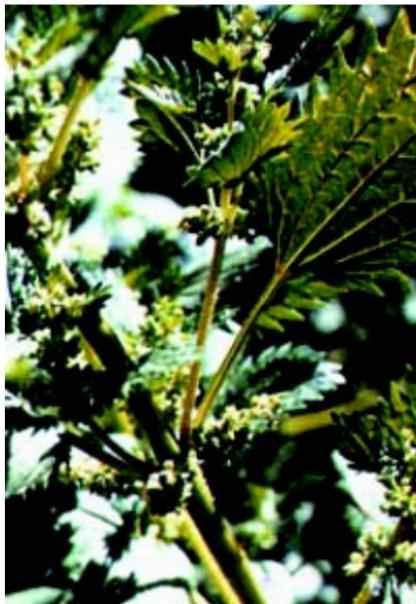
## ***Stinging Nettle***

### **Other names:**

Roman nettle, Roman nettle, dog or small nettle.

### **Mechanisms of toxicity:**

Brushing against the plant shears off a protective cap from specialized siliceous stinging hairs, allowing skin puncture. After puncture, an irritant liquid is released that can contain several pro-inflammatory mediators including alkaloids, histamine, acetylcholine, and 5 hydroxytryptamine. These substances cause the immediate reaction after a nettle sting. The term urticaria, describing the



characteristic skin eruption, is derived from the genus name. Thought to be a defense against browsing animals; usually does not involve a hypersensitivity reaction. Stinging can persist at the site for more than 12 hours after clinical features of urticaria have disappeared. This persistence of symptoms is due to secondary release of inflammatory mediators, or persistence of implanted hairs.

### **Comments:**

Genus of 30 species, usually perennial, single-stalked herbs less than 0.3 meter (1 foot) in height, found mainly in northern temperate areas. The tender tips are used as a leafy vegetable in some locales; simmering in water renders the stingers ineffective.



## 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

















