

Great Wall of China

Encyclopædia Britannica Article

Introduction

Chinese (Pinyin) Wanli Changcheng or (Wade-Giles romanization) Wan-li Ch'ang-ch'eng ("10,000-Li Long Wall")



Great Wall of China, eastern Asia, designated a World Heritage site in 1987.

extensive bulwark erected in ancient China, one of the largest building-construction projects ever undertaken. The Great Wall actually consists of numerous walls—many of them parallel to each other—built over some two millennia across northern China and southern Mongolia. The most extensive and best-preserved version of the wall dates from the Ming dynasty (1368-1644) and runs for some 5,500 miles (8,850 km) east to west from Mount Hu near Dandong, southeastern Liaoning province, to Jiayu Pass west of Jiuquan, northwestern Gansu province. This wall often traces the cretelines of hills and mountains as it snakes across the Chinese countryside, and about one-fourth of its length consists

solely of natural barriers such as rivers and mountain ridges. Nearly all of the rest (about 70 percent of the total length) is actual constructed wall, with the small remaining stretches constituting ditches or moats. Although lengthy sections of the wall are now in ruins or have disappeared completely, it is still one of the more remarkable structures on Earth. The Great Wall was designated a UNESCO World Heritage site in 1987.

Large parts of the fortification system date from the 7th through the 4th century BCE. In the 3rd century BCE Shihuangdi (Qin Shihuang), the first emperor of a united China (under the Qin dynasty), connected a number of existing defensive walls into a single system. Traditionally, the eastern terminus of the wall was considered to be Shanhai Pass (Shanhaiguan) in eastern Hebei province along the coast of the Bo Hai (Gulf of Chihli), and the wall's length—without its branches and other secondary sections—was thought to extend for some 4,160 miles (6,700 km). However, government-sponsored investigations that began in the 1990s revealed sections of wall in Liaoning, and aerial and satellite surveillance eventually proved that this wall stretched continuously through much of the province. The greater total length of the Ming wall was announced in 2009.

History of construction

The Great Wall developed from the disparate border fortifications and castles of individual Chinese kingdoms. For several centuries these kingdoms probably were as concerned with protection from their near neighbours as they were with the threat of barbarian invasions or raids.

Early building

About the 7th century BCE the state of Chu started to construct a permanent

defensive system. Known as the "Square Wall," this fortification was situated in the northern part of the kingdom's capital province. From the 6th to the 4th century other states followed Chu's example. In the southern part of the Qi state an extensive perimeter wall was gradually created using existing river dikes, newly constructed bulwarks, and areas of impassable mountain terrain. The Qi wall was made mainly of earth and stone and terminated at the shores of the Yellow Sea. In the Zhongshan state a wall system was built to thwart invasion from the states of Zhao and Qin in the southwest. There were two defensive lines in the Wei state: the Hexi ("West of the [Yellow] River") and Henan ("South of the River") walls. The Hexi Wall was a fortification against the Qin state and western nomads. Built during the reign of King Hui (370–335 BCE), it was expanded from the dikes on the Luo River on the western border. It started in the south near Xiangyuan Cave, east of Mount Hua, and ended at Guyang in what is now the Inner Mongolia Autonomous Region. Henan Wall, built to protect Daliang (the capital, now Kaifeng), was repaired and extended in King Hui's later years. The Zheng state also built a wall system, which was rebuilt by the Han state after it conquered Zheng. The state of Zhao completed a southern wall and a northern wall; the southern wall was built mainly as a defense against the Wei state.

After administrative reorganization was carried out by Shang Yang (died 338 BCE), the Qin state grew politically and militarily to become the strongest among the seven states, but it was frequently raided by the Donghu and Loufan, two nomadic peoples from the north. Therefore, the Qin erected a wall that started from Lintiao, went north along the Liupan Mountains, and ended at the Huang He (Yellow River).

In the Yan state two separate defensive lines were prepared—the Northern Wall and the Yishui Wall—in an effort to defend the kingdom from attacks by northern groups such as the Donghu, Linhu, and Loufan, as well as by the Qi state in the south. The Yishui Wall was expanded from the dike of the Yi River as a defense line against Qi and Zhao, its two main rival states. It began southwest of Yi City, the capital, and ended south of Wen'an. In 290 BCE the Yan state built the Northern Wall along the Yan Mountains, starting from the northeast in the area of Zhangjiakou in Hebei, passing over the Liao River, and extending to the ancient city of Xiangping (modern Liaoyang). This was the last segment of the Great Wall to be erected during the Zhanguo (Warring States) period.

In 221 BCE Shihuangdi, the first Qin emperor, completed his annexation of Qi and thus unified China. He ordered removal of the fortifications set up between the previous states because they served only as obstacles to internal movements and administration. In addition, he sent Gen. Meng Tian to garrison the northern border against incursions of the nomadic Xiongnu and to link the existing wall segments in Qin, Yan, and Zhao into the so-called "10,000-*Li* Long Wall" (2 *li* equal approximately 0.6 mile [1 km]). This period of construction began about 214 BCE and lasted a decade. Hundreds of thousands of soldiers and conscripted workers laboured on the project. With the fall of the Qin dynasty after Shihuangdi's death, however, the wall was left largely ungarrisoned and fell into disrepair.

The Han through Yuan dynasties

During the reign of the Han emperor Wudi (141–87 BCE), the wall was strengthened as part of an overall campaign against the Xiongnu. From that period the Great Wall also contributed to the exploitation of farmland in northern and western China and to the growth of the trade route that came to be known as the Silk Road. In 121 BCE

a 20-year project of construction was started on the Hexi Wall (generally known as the Side Wall) between Yongdeng (now in Gansu) in the east and Lake Lop Nur (now in Xinjiang) in the west. According to *Juyan Hanjian* ("Juyan Correspondence of the Han"), the strongpoints set up along the wall included "a beacon every 5 *li*, a tower every 10 *li*, a fort every 30 *li*, and a castle every 100 *li*."

The main work on the wall during the Dong (Eastern) Han period (25-220 CE) took place during the reign of Liu Xiu (Guangwudi), who in 38 ordered the repair of four parallel lines of the Great Wall in the area south of the Hexi Wall. The Great Wall served not only for defense but also to centralize control of trade and travel.

During the Bei (Northern) Wei dynasty (386-534/535 CE), the Great Wall was repaired and extended as a defense against attacks from the Juan-juan and Khitan tribes in the north. According to *Wei shu: Mingyuandi Ji* ("History of Wei: Chronicle of Emperor Mingyuan"), in 417, the eighth year of the reign of Mingyuan (409-423), a part of the Great Wall was built south of Changchuan, from Chicheng (now in Hebei) to Wuyuan (now in Inner Mongolia) in the west, extending more than 620 miles (1,000 km). During the reign of Taiwudi (423-452), a lower and thinner wall of rammed earth was built around the capital as a complement to the Great Wall. Starting from Guangling in the east, it extended to the eastern side of the Huang He, forming a circle around Datong. In 549, after the Dong Wei kingdom moved its capital east to Ye, it also built a segment of the Great Wall in the area of contemporary Shanxi province.

In order to strengthen its northern frontier and prevent invasion from the west by the Bei Zhou, the Bei Qi kingdom (550-577) launched several big construction projects that were nearly as extensive in scope as the building projects of the Qin dynasty. In 552 a segment was built on the northwestern border, and only three years later the emperor ordered the recruitment of 1.8 million workers to repair and extend other sections. The construction took place between the south entrance of Juyong Pass (near modern Beijing) and Datong (in Shanxi). In 556 a new fortification was set up in the east and extended to the Yellow Sea. The following year a second wall was built inside the Great Wall within modern Shanxi, beginning in the vicinity of Laoying east of Pianguan, extending to the east beyond Yanmen Pass and Pingxing Pass, and ending in the area around Xiaguan in Shanxi. In 563 the emperor Wuchengdi of the Bei Qi had a segment repaired along the Taihang Mountains. That is the part of the Great Wall found today in the area around Longguan, Guangchang, and Fuping (in Shanxi and Hebei). In 565 the inner wall built in 557 was repaired, and a new wall was added that started in the vicinity of Xiaguan, extended to the Juyong Pass in the east, and then joined to the outer wall. The segments repaired and added during the Bei Qi period totaled some 900 miles (1,500 km), and towns and barracks were established at periodic intervals to garrison the new sections. In 579, in order to prevent invasions of the Bei Zhou kingdom by the Tujue (a group of eastern Turks) and the Khitan, the emperor Jing started a massive rebuilding program on areas of the wall located in the former Bei Qi kingdom, starting at Yanmen in the west and ending at Jieshi in the east.

During the Sui dynasty (581-618) the Great Wall was repaired and improved seven times in an effort to defend the country against attacks from the Tujue. After the Tang dynasty (618-907) replaced the Sui, the country grew much stronger militarily, defeating the Tujue in the north and expanding beyond the original frontier. Thus, the Great Wall gradually lost its significance as a fortification, and there was no need for repairs or additions. During the Song dynasty (960-1279), however, the Liao and Jin peoples in the north were a constant threat. The Song rulers were forced to

withdraw to the south of the lines of the Great Wall built by the Qin, Han, and Northern dynasties. Many areas on both sides of the wall were subsequently taken over by the Liao (907–1125) and Jin dynasties (1115–1234). When the Song rulers had to retreat even farther—to the south of the Yangtze River (Chang Jiang)—repairs to the wall or extensions of it were no longer feasible. Limited repairs were carried out once (1056) during Liao times but only in the area between the Yazi and Huntong rivers.

In 1115, after the Jin dynasty was established, work was performed on two defensive lines at Mingchang. The old wall there—previously called the Wushu Wall, or Jinyuan Fort—ran westward from a point north of Wulanhada, then wound through the Hailatu Mountains, turning to the north and then to the west again, finally ending at the Nuanshui River. The second of the lines was the new Mingchang Wall, also called the Inner Jin Wall or the Jin Trench, which was constructed south of the old wall. It started in the west from a bend in the Huang He and ended at the Sungari (Songhua) River.

During the Yuan (Mongol) dynasty (1206–1368), the Mongols controlled all of China, as well as other parts of Asia and sections of Europe. As a defensive structure the Great Wall was of little significance to them; however, some forts and key areas were repaired and garrisoned in order to control commerce and to limit the threat of rebellions from the Chinese (Han) and other nationalities.

The Ming dynasty to the present

Rulers during the Ming dynasty (1368–1644) ceaselessly maintained and strengthened the Great Wall to prevent another Mongolian invasion. The majority of the work took place along the old walls built by the Bei Qi and Bei Wei.



Tourists on a section of the Great Wall of China near Beijing.

Most of the Great Wall that stands today is the result of work done during the reign of the Hongzhi emperor (1487–1505). Starting west of Juyong Pass, this part of the wall was split into south and north lines, respectively named the Inner and Outer walls. Along the wall were many strategic “passes” (i.e., fortresses) and gates. Among them were Juyong, Daoma, and Zijing passes, the three closest to the Ming capital Beijing. Together they were referred to as the Three Inner Passes. Farther west were Yanmen, Ningwu, and Piantou passes, known as the Three Outer Passes. Both the Inner and Outer passes were of key importance in protecting the capital and were usually heavily garrisoned.

After the Qing (Manchu) dynasty (1644–1911/12) replaced the Ming, there was a change in ruling strategy called *huairou* (“mollification”), wherein the Qing tried to pacify the leaders and peoples of Mongolia, Tibet, and other nationalities by not interfering with local social, cultural, or religious life. Because of the success of that strategy, the Great Wall was repaired less frequently, and it gradually fell into ruin.

Design of the fortifications

The Great Wall had three major components: passes, signal towers (beacons), and

walls.

Passes

Passes were major strongholds along the wall, usually located at such key positions as intersections with trade routes. The ramparts of many passes were faced with huge bricks and stones, with dirt and crushed stones as filler. The bastions measured some 30 feet (10 metres) high and 13 to 16 feet (4 to 5 metres) wide at the top. Within each pass were access ramps for horses and ladders for soldiers. The outside parapet was crenellated, and the inside parapet, or *yuqiang* (*nüqiang*), was a low wall about 3 feet (1 metre) high that prevented people and horses from falling off the top. In addition to serving as an access point for merchants and other civilians, the gate within the pass was used as an exit for the garrison to counterattack raiders or to send out patrols. Under the gate arch there was typically a huge double door of wood. Bolts and locker rings were set in the inner panel of each door. On top of each gate was a gate tower that served as a watchtower and command post. Usually it stood one to three stories (levels) high and was constructed either of wood or of bricks and wood. Built outside the gate, where an enemy was most likely to attack, was a *wengcheng*, a semicircular or polygonal parapet that shielded the gate from direct assault. Extending beyond the most strategic *wengchengs* was an additional line of protection, the *luocheng*, which was often topped by a tower used to watch those beyond the wall and to direct troop movements in battles waged there. Around the gate entrance there was often a moat that was formed in the process of digging earth to build the fortifications.

Signal towers

Signal towers were also called beacons, beacon terraces, smoke mounds, mounds, or kiosks. They were used to send military communications: beacon (fires or lanterns) during the night or smoke signals in the daytime; other methods such as raising banners, beating clappers, or firing guns were also used. Signal towers, often built on hilltops for maximum visibility, were self-contained high platforms or towers. The lower levels contained rooms for soldiers, as well as stables, sheepfolds, and storage areas.

Walls

The wall itself was the key part of the defensive system. It usually stood 21.3 feet (6.5 metres) wide at the base and 19 feet (5.8 metres) at the top, with an average height of 23 to 26 feet (7 to 8 metres), or a bit lower on steep hills. The structure of the wall varied from place to place, depending on the availability of building materials. Walls were made of tamped earth sandwiched between wooden boards, adobe bricks, a brick and stone mixture, rocks, or pilings and planks. Some sections made use of existing river dikes; others used rugged mountain terrain such as cliffs and gorges to take the place of man-made structures.

In the western deserts the walls were often simple structures of rammed earth and adobe; many eastern ramparts, such as those near Badaling, were faced with stone and included a number of secondary structures and devices. On the inner side of such walls, placed at small intervals, were arched doors called *juan*, which were

made of bricks or stones. Inside each *juan* were stone or brick steps leading to the top of the battlement. On the top, on the side facing outward, stood 7-foot- (2-metre-) high crenels called *duokou*. On the upper part of the *duokou* were large openings used to watch and shoot at attackers, and on the lower part were small openings, or loopholes, through which defenders could also shoot. At intervals of about 650 to 1,000 feet (200 to 300 metres) there was a crenellated platform rising slightly above the top of the wall and protruding from the side that faced attackers. During battle the platform provided a commanding view and made it possible to shoot attackers from the side as they attempted to scale the wall with ladders. On several platforms were simply structured huts called *pufang*, which provided shelter for the guards during storms. Some platforms, as with signal towers, had two or three stories and could be used to store weapons and ammunition. Those at Badaling commonly had two stories, with accommodations for more than 10 soldiers on the lower level. There were also drainage ditches on the walls to shield them from damage by excessive rainwater.

Military administration

Each major stronghold along the wall was hierarchically linked to a network of military and administrative commands. During the rule of Shihuangdi, 12 prefectures were established along the wall, and in the Ming period the whole fortification was divided into 9 defense areas, or zones. A post chief (*zongbingguan*) was assigned to each zone. Together they were known as the Nine Border Garrisons.

Tradition and conservation

The Great Wall has long been incorporated into Chinese mythology and popular symbolism, and in the 20th century it came to be regarded as a national symbol. Above the East Gate (Dongmen) at Shanhai Pass is an inscription attributed to the medieval historian Xiao Xian, which is translated as "First Pass Under Heaven," referring to the traditional division between Chinese civilization and the barbarian lands to the north.

Despite the wall's cultural significance, roadways have been cut through it at several points, and vast sections have suffered centuries of neglect. In the 1970s a segment near Simatai (68 miles [110 km] northeast of Beijing) was dismantled for building materials, but it was subsequently rebuilt. Other areas have also been restored, including just northwest of Jiayu Pass at the western limit of the wall; at Huangya Pass, some 105 miles (170 km) north of Tianjin; and at Mutianyu, about 55 miles (90 km) northeast of Beijing. The best-known section, at Badaling (43 miles [70 km] northwest of Beijing), was rebuilt in the late 1950s; it now attracts thousands of national and foreign tourists every day. Portions of the wall around Shanhai Pass and at Mount Hu, the eastern terminus, also had been rebuilt by 2000.

Additional Reading

Daniel Schwartz, *The Great Wall of China* (1990), collects 159 duotone photographs and essays by Jorge Luis Borges and Luo Zhewen. Arthur Waldron, *The Great Wall of China: From History to Myth* (1990), examines why and when the wall was actually

built.

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Angkor

Encyclopædia Britannica Article

Introduction



Angkor, Camb., designated a World Heritage site in 1992.

archaeological site in what is now northwestern Cambodia, just 4 miles (6 km) north of the modern town of Siĕmréab. It was the capital of the Khmer (Cambodian) empire from the 9th to the 15th century, a period that is considered the classical era of Cambodian history. Its most imposing monuments are Angkor Wat, a temple complex built in the 12th century by King Suryavarman II (reigned 1113-*c.* 1150), and Angkor Thom, a temple complex built about 1200 by King Jayavarman VII. (*See also* Southeast Asian arts: Kingdom of Khmer: 9th to 13th century.)

History



Ruined temples at the Angkor Thom complex, Angkor, Cambodia.

The city of Angkor served as the royal centre from which a dynasty of Khmer kings ruled one of the largest, most prosperous, and most sophisticated kingdoms in the history of Southeast Asia. From the last decade of the 9th century, when King Yashovarman I made Angkor his place of residence, until the early years of the 13th century, the kings of Angkor ruled over a territory that extended from the tip of the Indochinese Peninsula northward to modern Yunnan province, China, and from Vietnam westward toward the Bay of Bengal. During this entire period, these rulers utilized the vast resources of labour and wealth at their disposal to carry out a series of prodigious construction projects designed to glorify both themselves, their gods, and their capital city. After the reign of King Jayavarman VII (1181-*c.* 1220), the power and vitality of the kingdom gradually waned until finally, after

the armies of the Tai state of Ayutthaya (Ayudhia) captured and sacked Angkor in 1431, the city was partially abandoned.

There were many changes in architecture and artistic style at Angkor, and there was a religious movement from the Hindu cult of the god Shiva to that of Vishnu and then to a Mahayana Buddhist cult devoted to the bodhisattva Avalokiteshvara.

Angkor was a centre for administration and for the worship of a divine monarch. The city was planned and constructed on the basis of religious and political conceptions imported from India and adapted to local traditions. From the time of Yashovarman I, who named the city Yashodharapura, Angkor was conceived as a symbolic universe structured according to the model provided by traditional Indian (Hindu) cosmology. The city was oriented around a central mountain or pyramid temple (symbolic of Mount Meru, home of the gods) that was an architectural adaptation and completion of the one natural hill in the area, the Phnom Bakheng. In a similar manner, the central structure of each temple reflected the position of Mount Meru. The outer walls of each temple recalled the mountains that were believed to ring the edge of the cosmos, or world. The vast system of reservoirs, canals, and moats, which was one of the most notable features of Angkor, served primarily as a means of water

control and rice irrigation, although it also represented the waters of the cosmos.

In the later history of the city, the central temples were completely architectural creations (i.e., pyramid temples), such as the Phimeanakas of Suryavarman I (reigned c. 1000-50); the Baphuon of Udayadityavarman II (reigned 1050-66); and the Buddhist temple of Bayon, which was the central temple built by Jayavarman VII when he gave the city, which was later known as Angkor Thom, or “Great City,” its more or less final form.

Many of the temples at Angkor, all of which gave expression to Indian cosmological and mythical themes, were built in order to provide a locus for cults through which kings and other members of the royal family could be assured of immortality by becoming identified with Shiva or one of the other preeminent gods of the realm. For example, Angkor Wat, which is perhaps the greatest and certainly the most famous of all the temples in the Angkor complex, was built by King Suryavarman II in the 12th century as a vast funerary temple within which his remains were to be deposited, thus symbolically confirming his permanent identity with Vishnu. Inside the third enclosure at Angkor Wat are bas-reliefs running for hundreds of yards that depict scenes from the *Mahabharata* and the *Ramayana*, as well as a scene of Suryavarman holding court. Hundreds of statues of *apsaras* (angelic dancers) also adorn the temple.

In the late 13th century, according to a vivid account by the Chinese commercial envoy Zhou Daguan, Angkor was still a large, thriving metropolis and one of the most magnificent capitals in all Asia. Nevertheless, by then the great building frenzy that had peaked during the reign of Jayavarman VII had clearly come to an end, the new and more restrained religious orientation represented by Theravada Buddhism was on the rise, and the armies of Ayutthaya established in the western sections of the empire were beginning to encroach on the Khmer heartland. By the 16th century, when the next available firsthand description was written, the city was abandoned, and all that remained were the jungle-covered remnants of the ancient temples and the ruins of the once-magnificent system of reservoirs and waterways.

Archaeological interest and preservation issues

During the more than four centuries between the demise of the ancient city and the beginning of the modern period (i.e., from the mid-15th century to the late 19th century), interest in Angkor was largely focused on Angkor Wat, which, having been taken over and kept largely intact by Theravada Buddhist monks, became one of the most important pilgrimage sites in Southeast Asia. Even during this period, however, a number of early European visitors to Cambodia showed a strong curiosity concerning the “lost city,” and, when the French colonial regime was established (1863), the entire site became the focus of intense scholarly interest and concern. Working at first independently and then, in the first half of the 20th century, under the aegis of the government-sponsored École Française d'Extrême Orient (French School of the Far East), a group of French archaeologists and philologists initiated a comprehensive program of research, which yielded much of the knowledge now possessed about the history of the city and the sophisticated religious and political system that informed and guided its life. Archaeologists also carried through an arduous and painstaking program of reconstruction, through which the ancient complex of temples, reservoirs, and canals was partially restored.

During the political and military upheavals of the second half of the 20th century in Cambodia, there was some war damage and thievery among the temples at Angkor,

but the major problem was one of neglect. Without adequate caretaking, the buildings became prey to engulfing vegetation and eroding water and elements. In 1992 UNESCO designated Angkor a World Heritage site and added it to the List of World Heritage in Danger (it was removed from the list in 2004). Subsequently, internationally organized preservation efforts were undertaken, and several countries contributed to the restoration of monuments at Angkor.

In 1994 the Angkor area was scanned by radar from the U.S. space shuttle *Endeavour*. This and subsequent remotely sensed images (in 1996) revealed the presence of theretofore uncharted buildings and hydrological structures. Using that information and further archaeological investigation, it was proposed in the early 21st century that Angkor's demise may have been the result of environmental degradation: it is thought that deforestation and other overuse of the land increased flooding and siltation, which eventually undermined the region's vital system of irrigation canals.

Frank E. Reynolds
Ed.

Additional Reading

Works on Angkor, including both the city and the “Angkor region,” all extensively illustrated, include GEORGE CÆDÈS, *Angkor: An Introduction* (1963, reissued 1986); BERNARD GROSLIER and JACQUES ARTHAUD, *Angkor: Art and Civilization*, rev. ed. (1966); JAN MYRDAL and GUN KESSLE, *Angkor: An Essay on Art and Imperialism* (1970); JOAN LEBOLD COHEN, *Angkor: Monuments of the God-kings* (1973); MADELEINE GITEAU, *The Civilization of Angkor* (1976); MICHAEL FREEMAN and ROGER WARNER, *Angkor: The Hidden Glories* (1990); and CLAUDE JACQUES, *Angkor* (1999). More recent studies include CHARLES HIGHAM, *The Civilization of Angkor* (2001); and CHARLES HIGHAM et al. (ed.), *The Origins of the Civilization of Angkor*, 2 vol. (2004-07).

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Borobudur

Encyclopædia Britannica Article

also spelled Barabudur or Baraboedoer



massive Buddhist monument in central Java, Indonesia, 26 miles (42 km) northwest of Yogyakarta. The Borobudur monument combines the symbolic forms of the stupa (a Buddhist commemorative mound usually containing holy relics), the temple mountain (based on Mount Meru of Hindu mythology), and the mandala (a mystic Buddhist symbol of the universe, combining the square as earth and the circle as heaven). The style of Borobudur

was influenced by Indian Gupta and post-Gupta art. The monument was designated a UNESCO World Heritage site in 1991.



Borobudur, Java, Indonesia.

Borobudur was constructed between about 778 and 850 CE, under the Shailendra dynasty. It was buried under volcanic ash from about 1000 and overgrown with vegetation until discovered by the English lieutenant governor Thomas Stamford Raffles in 1814. A team of Dutch archaeologists restored the site in 1907-11. A second restoration was completed by 1983.

Built with about 2,000,000 cubic feet (56,600 cubic metres) of gray volcanic stone, Borobudur encloses a small hill and is shaped like a stepped pyramid with three major levels—a square base, a middle level of five square terraces, and an upper level of three circular terraces—totaling, in effect, nine lesser sections (the number nine is mystic in Buddhism). The centre, 115 feet (35 metres) above the base, consists of a large individual stupa.

Each of the monument's three main levels represents a stage on the way to the bodhisattva ideal of enlightenment; symbolizing this spiritual journey, a pilgrim begins at the eastern stairway and walks clockwise around each of the monument's nine levels before reaching the top, a distance of more than 3 miles (5 km). At the lowest level, which is partially hidden, are hundreds of reliefs of earthly desires, illustrating *kama-dhatu* ("the realm of feeling"), the lowest sphere of the Mahayana Buddhist universe. On the next level, a series of reliefs depict *rupa-dhatu* (the middle sphere and "the realm of form") through events in the life of the Gautama Buddha and scenes from the *Jatakas* (stories of his previous lives). The upper level illustrates *arupa-dhatu*, "the realm of formlessness," or detachment from the physical world; there is little decoration, but lining the terraces are 72 bell-shaped stupas, many still containing a statue of the Buddha, partly visible through the perforated stonework. During the Waicak ceremony, which occurs once a year during a full moon, thousands of saffron-robed Buddhist monks walk in solemn procession to Borobudur to commemorate the Buddha's birth, death, and enlightenment.

For further treatment of the architecture and symbolism of the monument, see Southeast Asian arts: Borobudur.

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Giza, Pyramids of

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Arabic **Ahrāmāt Al-Jīzah** , *Giza also spelled* **Gizeh**



Pyramids of Giza, Egypt.

three 4th-dynasty (*c.* 2575-*c.* 2465 BCE) pyramids erected on a rocky plateau on the west bank of the Nile River near Al-Jīzah (Giza) in northern Egypt. In ancient times they were included among the Seven Wonders of the World. The ancient ruins of the Memphis area, including the Pyramids of Giza, Ṣaqqārah, Dahshūr, Abū Ruwaysh, and Abū Ṣīr, were collectively designated a UNESCO World Heritage site in 1979.



A discussion of some of the most important sites associated with ancient Egypt.

The designations of the pyramids—Khufu, Khafre, and Menkaure—correspond to the kings for whom they were built. The northernmost and oldest pyramid of the group was built for Khufu (Greek: Cheops), the second king of the 4th dynasty. Called the Great Pyramid, it is the largest of the three, the length of each side at the base averaging 755.75 feet (230 metres) and its original height being 481.4 feet (147 metres). The middle pyramid was built for Khafre (Greek: Chephren), the fourth of the eight kings of the 4th dynasty; the structure measures 707.75 feet (216 metres) on each side and was originally 471 feet (143 metres) high. The southernmost and last pyramid to be built was that of Menkaure (Greek: Mykerinus), the fifth king of the 4th dynasty; each side measures 356.5 feet (109 metres), and the structure's completed height was 218 feet (66 metres). All three pyramids were plundered both internally and externally in ancient and medieval times. Thus, the grave goods originally deposited in the burial chambers are missing, and the pyramids no longer reach their original heights because they have been almost entirely



stripped of their outer casings of smooth white limestone; the Great Pyramid, for example, is now only 451.4 feet (138 metres) high. That of Khafre retains the outer limestone casing only at its topmost portion. Constructed near each pyramid was a mortuary temple, which was linked via a sloping causeway to a valley temple on the edge of the Nile floodplain. Also nearby were subsidiary pyramids used for the burials of other members of the royal family.

Khufu's pyramid is perhaps the most colossal single building ever erected on the planet. Its sides rise at an angle of 51° 52' and are accurately oriented to the four cardinal points of the compass. The Great Pyramid's core is made of yellowish limestone blocks, the outer casing (now almost completely gone) and the inner passages are of finer light-coloured limestone, and the interior burial chamber is built of huge blocks of granite. Approximately 2.3 million blocks of stone were cut, transported, and assembled to create the 5.75-million-ton structure, which is a masterpiece of technical skill and engineering ability. The internal walls as well as those few outer-casing stones that still remain in place show finer joints than any other masonry constructed in ancient Egypt.

The entrance to the Great Pyramid is on the north side, about 59 feet (18 metres) above ground level. A sloping corridor descends from it through the pyramid's interior masonry, penetrates the rocky soil on which the structure rests, and ends in an unfinished underground chamber. From the descending corridor branches an

ascending passageway that leads to a room known as the Queen's Chamber and to a great slanting gallery that is 151 feet (46 metres) long. At the upper end of this gallery, a long and narrow passage gives access to the burial room proper, usually termed the King's Chamber. This room is entirely lined and roofed with granite. From the chamber two narrow shafts run obliquely through the masonry to the exterior of the pyramid; it is not known whether they were designed for a religious purpose or were meant for ventilation. Above the King's Chamber are five compartments separated by massive horizontal granite slabs; the likely purpose of these slabs was to shield the ceiling of the burial chamber by diverting the immense thrust exerted by the overlying masses of masonry.

The question of how the pyramids were built has not received a wholly satisfactory answer. The most plausible one is that the Egyptians employed a sloping and encircling embankment of brick, earth, and sand, which was increased in height and in length as the pyramid rose; stone blocks were hauled up the ramp by means of sledges, rollers, and levers. According to the ancient Greek historian Herodotus, the Great Pyramid took 20 years to construct and demanded the labour of 100,000 men. This figure is believable given the assumption that these men, who were agricultural labourers, worked on the pyramids only (or primarily) while there was little work to be done in the fields—i.e., when the Nile River was in flood. By the late 20th century, however, archaeologists found evidence that a more limited workforce may have occupied the site on a permanent rather than a seasonal basis. It was suggested that as few as 20,000 workers, with accompanying support personnel (bakers, physicians, priests, etc.), would have been adequate for the task.

To the south of the Great Pyramid near Khafre's valley temple lies the Great Sphinx. Carved out of limestone, the Sphinx has the facial features of a man but the body of a recumbent lion; it is approximately 240 feet (73 metres) long and 66 feet (20 metres) high. (*See sphinx.*)

In 1925 a pit tomb containing the transferred burial equipment of Khufu's mother, Queen Hetepheres, was discovered near the upper end of the causeway of Khufu. At the bottom of a deep stone-filled shaft was found the queen's empty sarcophagus, surrounded by furniture and articles of jewelry attesting to the high artistic ability and technical perfection of the 4th-dynasty craftsmen.

Surrounding the three pyramids are extensive fields of flat-topped funerary structures called mastabas; arranged in a grid pattern, the mastabas were used for the burials of relatives or officials of the kings. Besides the core mastabas of the 4th dynasty, numerous mastabas from the 5th and 6th dynasties (c. 2465–c. 2150 BCE) have been found around and among the earlier structures.

In the late 1980s and '90s, excavations in the environs of the pyramids revealed labourers' districts that included bakeries, storage areas, workshops, and the small tombs of workers and artisans. Mud sealings seem to date the workshop areas to the late 4th dynasty. The tombs range from simple mud-brick domes to more-elaborate stone monuments. Statuettes were found within some of the structures; hieroglyphic inscriptions on tomb walls occasionally identify the deceased.

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Central Intelligence Agency (CIA)

Encyclopædia Britannica Article

Introduction

principal foreign intelligence and counterintelligence agency of the U.S. government. Formally created in 1947, the CIA grew out of the World War II Office of Strategic Services (OSS). Previous U.S. intelligence and counterintelligence efforts had been conducted by the military and the Federal Bureau of Investigation (FBI) and suffered from duplication, competition, and lack of coordination, problems that continued, to some degree, into the 21st century.

The emergence of the CIA

The United States was the last of the major powers to establish a civilian intelligence agency responsible for the collection of secret information for policy makers. Indeed, prior to 1942 the country lacked any civilian intelligence agency. Information was collected in an unsystematic way by the Office of Naval Intelligence, by U.S. Army intelligence, and by the FBI. The information gathered was rarely shared with other government agencies and was sometimes not even provided to senior policy makers. For example, because of rivalries between army and navy intelligence offices, which did not want to jeopardize the “security” of their information, President Franklin D. Roosevelt was not given sensitive information about Japan in the months before the Japanese attacked Pearl Harbor in December 1941.

In June 1942 Roosevelt created the OSS to bring together the fragmented and uncoordinated strands of U.S. foreign intelligence gathering in a single organization. A similar office for this purpose, the Office of the Coordinator of Information, created in July 1941, had floundered as the result of hostile pressure from the State Department, the military intelligence services, and the FBI. William J. (“Wild Bill”) Donovan, who had spurred Roosevelt into creating an information agency, became head of the OSS upon its founding and was largely responsible for building the organization and for improving its ability to perform economic and political intelligence analysis for senior policy makers. (Roosevelt described Donovan as a man who had 100 new ideas a day, of which 95 were terrible—though he added that few men had 5 good ideas in their lifetimes. Donovan supported the use of exotic poisons against enemy targets and once proposed the use of bats to deliver incendiary weapons against Japan.)

During World War II the OSS, with a staff of approximately 12,000, collected and analyzed information on areas of the world in which U.S. military forces were operating. It used agents inside Nazi-occupied Europe, including Berlin; carried out counterpropaganda and disinformation activities; produced analytical reports for policy makers; and staged special operations (e.g., sabotage and demolition) behind enemy lines to support guerrillas and resistance fighters. Before the Allied invasion of Normandy in June 1944, more than 500 OSS agents were working inside occupied France. Among reports commissioned from the OSS were assessments of German

industry and war-making capability and a psychological profile of German dictator Adolf Hitler that concluded that he would likely commit suicide should Germany be defeated. Under Donovan's capable, if unorthodox, direction, the OSS was remarkably effective, despite the initial inexperience of most of its personnel. Its successes notwithstanding, the OSS was dismantled at the conclusion of the war.

In 1946 President Harry S. Truman, recognizing the need for a coordinated postwar intelligence establishment, created by executive order a Central Intelligence Group and a National Intelligence Authority, both of which recruited key former members of the OSS. As in the days of the OSS, there were problems of distrust and rivalry between the new civilian agencies and the military intelligence services and the FBI.

In 1947 Congress passed the National Security Act, which created the National Security Council (NSC) and, under its direction, the CIA. Given extensive power to conduct foreign intelligence operations, the CIA was charged with advising the NSC on intelligence matters, correlating and evaluating the intelligence activities of other government agencies, and carrying out other intelligence activities as the NSC might require. Although it did not end rivalries with the military services and the FBI, the law established the CIA as the country's preeminent intelligence service. The agency was popularly thought of as the U.S. counterpart of the Soviet KGB (which was dissolved in 1991), though, unlike the KGB, the CIA was forbidden by law (the National Security Act) from conducting intelligence and counterintelligence operations on domestic soil. In contrast, the majority of the KGB's operations took place within the Soviet Union and against Soviet citizens.

Organization and responsibilities

The CIA is headed by a director and deputy director, only one of whom may be a military officer. The director of central intelligence (DCI) is responsible for managing all U.S. intelligence-gathering activities. DCIs have been drawn from various fields, including not only intelligence but also the military, politics, and business. The DCI serves as the chief intelligence adviser to the president and is often his close confidant. Some intelligence directors have played critical roles in shaping U.S. foreign policy—e.g., Allen W. Dulles during the Dwight D. Eisenhower administration (1953-61) and William Casey during the Ronald Reagan administration (1981-89)—though others, particularly during the administration of Bill Clinton (1993-2001), have been less important in this respect.

The CIA is organized into four major directorates. The Intelligence Directorate analyzes intelligence gathered by overt means from sources such as the news media and by covert means from agents in the field, satellite photography, and the interception of telephone and other forms of communication. These analyses attempt to incorporate intelligence from all possible sources. During the Cold War most of this work was focused on the military and the military-industrial complex of the Soviet Union.

The Directorate of Operations is responsible for the clandestine collection of intelligence (i.e., espionage) and special covert operations. Clandestine activities are carried out under various covers, including the diplomatic cloak used by virtually every intelligence service, as well as corporations and other “front” companies that the CIA creates or acquires. Despite the elaborate nature of some covert operations, these activities represent only a small fraction of the CIA's overall budget.

The Directorate of Science and Technology is responsible for keeping the agency abreast of scientific and technological advances, for carrying out technical operations (e.g., coordinating intelligence from reconnaissance satellites), and for supervising the monitoring of foreign media. During the Cold War, material gathered from aerial reconnaissance produced detailed information on issues as varied as the Soviet grain crop and the development of Soviet ballistic missiles. Information obtained through these satellites was critical to the arms-control process; indeed, agreements reached during the Strategic Arms Limitation Talks (SALT) in the 1970s specifically mentioned the use of satellites to monitor the development of weapons. The Directorate of Science and Technology has been instrumental in designing spy satellites and in intercepting the communications of other countries.

The Directorate of Administration is responsible for the CIA's finances and personnel matters. It also contains the Office of Security, which is responsible for the security of personnel, facilities, and information as well as for uncovering spies within the CIA.

Activities

The publication of post-Cold War memoirs by former agents and the release of declassified documents by the United States and Russia have provided a fairly complete account of the CIA's activities, including both its successes and its failures. CIA data collection and analysis was important for arms-control negotiations with the Soviet Union throughout the Cold War and for determining U.S. strategy during the 1962 Cuban missile crisis, when President John F. Kennedy relied on information gathered by the CIA through Soviet double agent Colonel Oleg Penkovsky. During the 1970s and '80s, CIA agents in the Soviet military and the KGB provided information on the Soviet military-industrial complex. During the Cold War, CIA technical operations included the bugging of the Soviet military's major communications line in East Germany and the development of reconnaissance aircraft such as the U-2 and spy satellites capable of photographing targets as small as a rocket silo. Aerial reconnaissance—first by plane and then by satellite—provided early warning of the deployment of Soviet missiles in Cuba and the development of new missiles in the Soviet Union.

Among the Directorate of Operations' covert actions were the ouster of the premier of Iran, Mohammad Mosaddeq, and the restoration of the shah in 1953; the overthrow by military coup of the democratically elected leftist government of Guatemala in the following year; the organization of a "secret army" of Miao (Hmong) tribesmen to monitor the Ho Chi Minh Trail during the Vietnam War; the financial support of military officers plotting against the government of Chilean president Salvador Allende before the military coup there in 1973; and, in the 1980s, the arming and training of mujahideen guerrillas fighting the Soviet-backed government and the Soviet military in the Afghan War and the organizing, arming, and training of the Nicaraguan Contras fighting to overthrow that country's Sandinista government. (In the early 1960s the CIA briefly considered using illegal drugs to control foreign agents.)

Although many covert actions were highly successful, some were embarrassing failures, such as the abortive Bay of Pigs invasion of Cuba by CIA-sponsored Cuban émigrés in 1961 and the faulty intelligence gathering during the North Atlantic Treaty Organization's bombing campaign against Yugoslavia in 1999 that led to the destruction of the Chinese embassy in Belgrade. The CIA also was unsuccessful in its

multiple attempts to assassinate Cuban leader Fidel Castro in the 1960s through agents recruited within the Cuban government as well as through contacts with the Mafia in the United States. Plots to kill or embarrass Castro included poisoning his cigars, lacing his cigars with a hallucinogen, providing him with exploding cigars, poisoning his wet suit (Castro was an underwater enthusiast), and administering drugs that would cause his beard and eyebrows to fall out.

After the collapse of the Soviet Union in 1991, the CIA changed both its institutional structure and its mission. Whereas more than half its resources before 1990 had been devoted to activities aimed at the Soviet Union, in the post-Cold War era it increasingly targeted nonstate actors such as terrorists and international criminal organizations. It also made significant efforts to collect and analyze information about the proliferation of nuclear weapons. Spy satellites that had been used exclusively for military purposes were sometimes used for other tasks, such as collecting evidence of ecological disasters and human rights abuses.

During the 1990s the CIA supported U.S. military operations in the Balkans and the Middle East. It also sometimes served as a mediator between the Palestinian Authority and the government of Israel. Following the destruction by terrorists of the World Trade Center in New York City and part of the Pentagon near Washington, D.C., on September 11, 2001 (*see* September 11 attacks), CIA paramilitary officers in Afghanistan aided the U.S. attack on that country by collecting information and identifying military targets.

Criticism and assessment

The CIA has been criticized for conducting covert actions that some consider immoral or illegal under international law, for maintaining close ties to human rights abusers and other criminals, and for failing to safeguard its own operations. In the early days of the Cold War, the CIA and the U.S. military intelligence services smuggled former Nazi intelligence officers out of Europe, and the agency worked with several former Nazis to conduct intelligence operations in eastern Europe and the Soviet Union. In the 1980s and '90s, in an effort to infiltrate foreign terrorist organizations, the CIA recruited foreign officials, particularly in Latin America, who had participated in the murder of civilians. A congressional inquiry led by Senator Robert Torricelli in the mid-1990s eventually resulted in the demotion or forced resignation of a number of CIA personnel. At about the same time, the agency was embarrassed by a series of counterintelligence scandals that included revelations that one of its intelligence officers, Aldrich Ames, had spied for the Soviet and Russian intelligence services for nine years; at least 10 CIA operatives in the Soviet Union had been executed on the basis of information he provided.

The CIA often has been portrayed by its critics as an agency run amok that implements covert operations without the approval of the executive branch of the U.S. government. Contrary to this assertion, however, all covert operations must be officially sanctioned by the executive branch. Once approved by the National Security Council, plans for covert action are presented to the Senate and House committees that oversee CIA operations.

After the terrorist attacks of September 2001, the CIA, along with the FBI, was criticized for failing to penetrate terrorist groups that pose a threat to the United States and for failing to share information on such groups. The budget for intelligence activities was dramatically increased, and the CIA was given extensive new powers to

conduct intelligence and paramilitary operations against terrorists. In 2005 a presidential committee examining intelligence failures released a report that criticized the CIA for its inaccurate assessments of Ṣaddām Ḥussein's possession of weapons of mass destruction in the lead-up to the Iraq War. Policy makers also began to debate whether the executive order that prohibited the CIA from carrying out assassinations (signed in 1976 by President Gerald Ford) should be reversed.

The CIA faces far greater public scrutiny than the intelligence services of most other Western democracies. Its failures are trumpeted in the press, discussed on the floor of Congress, and frequently leaked to the media by ambitious policy makers. Apart from these problems, there exists a natural tension between the transparency and accountability essential to a democracy and the secrecy necessary for effective intelligence gathering. During the 1990s the CIA attempted to improve its public image by becoming more open about its activities. CIA “officers in residence” were assigned to several universities, unclassified intelligence estimates were made public, and the agency rapidly declassified material on subjects ranging from unidentified flying objects (UFOs) to Russian missile production.

Robert W. Pringle

List of CIA directors

The table provides a chronological list of the directors of the CIA.

Additional Reading

The CIA's role is discussed in JEFFREY T. RICHELSON, *The U.S. Intelligence Community*, 5th ed. (2008). A critical history of the CIA is provided in TIM WEINER, *Legacy of Ashes: The History of the CIA* (2007). An excellent account of the Office of Strategic Services is JOSEPH E. PERSICO, *Roosevelt's Secret War: FDR and World War II Espionage* (2001). CHRISTOPHER ANDREW, *For the President's Eyes Only: Secret Intelligence and the American Presidency from Washington to Bush* (1995), provides a good overview of U.S. intelligence. ROBERT M. GATES, *From the Shadows: The Ultimate Insider's Story of Five Presidents and How They Won the Cold War* (1993, reissued in 1996), is an insider's account by a former CIA director. The covert operations of the CIA have been discussed in the works of many former operations officers, including ANTONIO MENDEZ, *The Master of Disguise: My Secret Life in the CIA* (1999); WILLIAM J. DAUGHERTY, *In the Shadow of the Ayatollah* (2001); and DAVID ATLEE PHILLIPS, *The Night Watch* (1977). The struggle between the CIA and the KGB is detailed in DAVID E. MURPHY, SERGEI A. KONDRASHEV, and GEORGE BAILEY, *Battleground Berlin: CIA vs. KGB in the Cold War* (1997, reissued 1999); and MILT BEARDEN and JAMES RISEN, *The Main Enemy: The Inside Story of the CIA's Final Showdown with the KGB* (2003).

An excellent study of the first leaders of the Directorate of Operations is EVAN THOMAS, *The Very Best Men: Four Who Dared* (1995). The origins of the CIA and its leadership are also the subject of AMY B. ZEGART, *Flawed by Design: The Evolution of the CIA, JCS, and NSC* (1999); DAVID R. RUDGERS, *Creating the Secret State: The Origins of the Central Intelligence Agency, 1943-1947* (2000); and BURTON HERSH, *The Old Boys: The American Elite and the Origins of the CIA* (1992, reissued 2002). The human cost of CIA operations is explored in TED GUP, *The Book of Honor: Covert Lives and Classified Deaths at the CIA* (2000).

Monographs published by the CENTRAL INTELLIGENCE AGENCY CENTER FOR THE STUDY OF INTELLIGENCE include *The CIA and the U-2 Program, 1954-1974* (1998); *Assessing the Soviet Threat: The Early Cold War Years* (1997); and *At Cold War's End: US Intelligence on the Soviet Union and Eastern Europe, 1989-1991* (1999). Also helpful is CENTRAL INTELLIGENCE AGENCY, *A Consumer's Guide to Intelligence* (2000).

Robert W. Pringle

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KGB

Encyclopædia Britannica Article

Introduction

Russian in full *Komitet Gosudarstvennoy Bezopasnosti* , *English* *Committee for State Security*

foreign intelligence and domestic security agency of the Soviet Union. During the Soviet era the KGB's responsibilities also included the protection of the country's political leadership, the supervision of border troops, and the general surveillance of the population.

Pre-KGB Soviet security services

Established in 1954, the KGB was the most durable of a series of security agencies starting with the Cheka, which was established in December 1917 in the first days of the Bolshevik government. The Cheka (originally VCHEKA, an acronym derived from the Russian words for All-Russian Extraordinary Commission for Combating Counterrevolution and Sabotage) was charged with the preliminary investigation of counterrevolution and sabotage, but it quickly assumed responsibility for arresting, imprisoning, and executing "enemies of the state," which included the former nobility, the bourgeoisie, and the clergy. The Cheka played a prominent role in the Russian Civil War (1918-20) and aided in crushing the anti-Soviet Kronshtadt and Antonov rebellions in 1921. When Soviet archives were opened in the 1990s, it was learned that the Cheka, which in 1921 had a staff of more than 250,000, was responsible for the execution of more than 140,000 people. Feliks Dzerzhinsky, the Cheka's chief during the early years of Soviet power, molded the service into an effective, merciless tool of the ruling Communist Party.

In 1922 the Cheka was supplanted by the GPU (State Political Administration) in an effort by the Communist Party to reduce the scale of the Cheka's terror. A year later the GPU was renamed the OGPU (Unified State Political Administration) and given additional duties, including the administration of "corrective" labour camps and the surveillance of the population. As Joseph Stalin consolidated his power and directed the modernization of the Soviet Union, the OGPU implemented the forced collectivization of agriculture and the deportation of the kulaks (wealthy peasants) and staged show trials of "enemies of the people." By the early 1930s the OGPU controlled all Soviet security functions, directing a vast army of informers in factories, government offices, and the Red Army. During this period the OGPU also conducted covert operations on foreign soil to disrupt the activities of the regime's opponents, some of whom it kidnapped and murdered.

In 1934 the OGPU was absorbed into the new NKVD (People's Commissariat of Internal Affairs), which helped Stalin to consolidate his power by carrying out purges (see purge trials). More than 750,000 people were executed in 1937-38 alone, including tens of thousands of party officials and military and security officers. Among the victims were more than half the members of the ruling Central Committee (the Communist Party's highest organ) as well as the NKVD's first two chiefs, Genrikh Yagoda and Nikolay Yezhov. Yezhov was succeeded as head of the NKVD by Lavrenty

Beria, who served from 1938 to 1953.

In 1941 responsibility for state security was transferred from the NKVD to the NKGB (People's Commissariat for State Security). Both agencies became ministries—the Ministry of Internal Affairs (MVD) and the Ministry of State Security (MGB)—in 1946. Beria, as a member of the ruling Central Committee, continued to supervise the two ministries while serving as head of the MVD. Beria also was responsible for the Soviet Union's nascent nuclear weapons program and oversaw intelligence operations directed at the U.S. and British atomic bomb projects.

The MGB, directed by V.S. Abakumov under Beria's supervision, played a major role in the Soviet Union's war effort in World War II and in the subsequent consolidation of its power in eastern Europe. During the war, the MGB conducted espionage and counterespionage operations, administered prisoner-of-war camps, and ensured the loyalty of the officer corps. It also supervised the deportation to Siberia and Central Asia of groups suspected of disloyalty, including more than one million Volga Germans, Crimean Tatars, Kalmyks, Chechen-Ingush, and other people of the Caucasus.

After the war, the MGB helped to crush all opposition, whether real or suspected, in eastern Europe and the Soviet Union; between 1945 and 1953 more than 750,000 Soviet citizens were arrested and punished for political crimes. Information uncovered in the 1990s indicated that by 1953 some 2,750,000 Soviet citizens were in jail or in forced-labour camps, and approximately the same number were in internal exile.

Soviet foreign intelligence in the last decade of Stalin's life was remarkable in both its scope and success. During World War II the MGB conducted operations in Nazi-occupied Europe. One of its networks, the "Red Orchestra," comprised several hundred agents and informers, including agents in the German ministries of foreign affairs, labour, propaganda, and economics. Declassified Russian and American documents indicate that the Soviet Union had placed at least five agents in the U.S. nuclear weapons program and possibly as many as 300 agents in the U.S. government by 1945. The British diplomatic and security establishments also had been infiltrated by important agents, including Kim Philby, a senior British intelligence officer. Evidence suggests that Soviet agents in Britain passed 15,000 to 20,000 documents to Moscow between 1941 and 1945. British and American agents of Soviet intelligence were for the most part ideological supporters of the regime, and many were members of communist parties.

Immediately following Stalin's death in March 1953, the MGB was merged back into the Ministry of Internal Affairs (MVD), still under Beria. Before the end of summer, the post-Stalinist leadership under Nikita Khrushchev turned against the power-hungry Beria, and he was deposed and executed. A series of trials and executions continuing into 1956 eliminated a number of his senior associates. In the meantime, millions of political prisoners were released from the MVD's vast system of forced labour camps and from internal exile. The MVD was gradually dismantled and finally abolished in 1960.

Creation and role of the KGB

The KGB was created in 1954 to serve as the "sword and shield of the Communist Party." The new security service, which played a major role in the purge of Beria's supporters, was designed to be carefully controlled by senior Communist Party

officials. It was divided into approximately 20 directorates, the most important of which were those responsible for foreign intelligence, domestic counterintelligence, technical intelligence, protection of the political leadership, and the security of the country's frontiers. In the late 1960s an additional directorate was created to conduct surveillance on suspected dissidents in the churches and among the intelligentsia. For the next 20 years the KGB became increasingly zealous in its pursuit of enemies, harassing, arresting, and sometimes exiling human rights advocates, Christian and Jewish activists, and intellectuals judged to be disloyal to the regime. Among the most famous of its victims were the Nobel laureates Aleksandr Solzhenitsyn and Andrey Sakharov.

After World War II the KGB gradually expanded its foreign intelligence operations to become the world's largest foreign intelligence service. As the Cold War with the United States intensified, the KGB came to be viewed as a counterpart of the U.S. Central Intelligence Agency; however, unlike the CIA, the KGB conducted most of its activities domestically, on Soviet soil and against Soviet citizens. The KGB's many agents sometimes posed as businessmen and journalists, though many used the more conventional diplomatic cover. Its successes included the infiltration of every major Western intelligence operation and the placement of agents of influence in almost every major capital. The KGB also was able to procure scientific and technical information for the Soviet military, and it repeatedly obtained advanced technology necessary for the development of Soviet submarines, airplanes, and rockets. Along with the GRU (Chief Intelligence Directorate of the General Staff), which was responsible for purely military operations, the KGB enjoyed tremendous access to the secrets of both its adversaries and its allies.

By the end of the 1960s, the KGB had become firmly established as the Communist Party's security watchdog. Its value as an instrument of political control was reflected in the appointment of its head, Yury Andropov, to the Politburo (1973) and his succession to the head of the party and the country in 1982. Under Andropov, the KGB recruited the "best and the brightest" members from the party establishment. Although it was aware of the extent of corruption in the decaying Soviet Union and did investigate and arrest some minor figures, it continued to be a servant of the party and was thus powerless to halt the country's decline.

The KGB did not fare as well under the reformist Soviet leader Mikhail Gorbachev (1985–91). Although Gorbachev respected the KGB's prowess in foreign intelligence, his reform agenda undercut its authority as well as that of the Communist Party. In the summer of 1991, several senior KGB officers, including KGB chairman Vladimir Kryuchkov, played key roles in an abortive coup designed to return the Soviet system to ideological and bureaucratic purity. Afterward the KGB was systematically stripped of its extensive military units and many of its domestic security functions.

With the dissolution of the Soviet Union in 1991, the KGB came under the control of Russia. The government of Russian President Boris Yeltsin supervised the division of the KGB into several major services responsible for internal security and foreign intelligence. Ukraine, Belarus, and other former Soviet republics established their own intelligence and security services, which maintained links to those of Russia. Nevertheless, efforts in Russia to reform the intelligence services were at best incomplete. The KGB and its leaders were never held accountable for crimes against the Soviet people.

Assessment

At its peak the KGB was the largest secret-police and foreign-intelligence organization in the world. Researchers with access to Communist Party archives put the number of KGB personnel at more than 480,000, including 200,000 soldiers in the Border Guards. Estimates of the number of informers in the Soviet Union are incomplete but usually range in the millions. Every Soviet leader depended on the KGB and its predecessors for information, surveillance of key elites, and control of the population. With the Communist Party and the army, the KGB formed the triad of power that ruled the Soviet Union. The KGB played a particularly important role in Soviet foreign policy. Foreign intelligence allowed the Soviet Union to maintain rough parity with the West in nuclear weapons and other weapons systems. Inside the country, however, the role of the KGB was baleful. Scholars disagree about the human cost of the KGB and its predecessors, but many estimate that they were responsible for the deaths of tens of millions of people.

A critical question in evaluating the KGB's foreign and domestic operations is why it failed to prevent the eventual collapse of the Soviet system. There is ample evidence that the KGB suffered from the same problems of bureaucratic inefficiency and corruption that plagued the sclerotic political leadership. In addition, during the last decade of Soviet power, numerous KGB officials defected to the West or agreed to work as agents in place in Moscow. Moreover, some studies suggest that, despite its vaunted reputation for espionage, the KGB lacked the analytical skills necessary to form an accurate picture of the regime's declining international and domestic situation. *See also* Federal Security Service.

Robert W. Pringle

Additional Reading

An excellent general history of the KGB is CHRISTOPHER ANDREW and OLEG GORDIYEVSKY, *KGB: The Inside Story of Its Foreign Operations from Lenin to Gorbachev* (1990). YEVGENITA ALBATS, *The State Within a State: The KGB and Its Hold on Russia* (1994), is a history of the KGB by a distinguished Russian journalist who had access to the archives of the Communist Party and the security services.

The human cost of KGB repression has been addressed in STÉPHANE COURTOIS, *The Black Book of Communism* (1999); and ALEKSANDR SOLZHENITSN, *The Gulag Archipelago*, 3 vol. (1974, reissued 1991). Good studies of the KGB's foreign intelligence operations are CHRISTOPHER ANDREW and VASSILY MITROKHIN, *The Mitrokhin Archive* (1999); ALEXANDER FEKLISOV, *The Man Behind the Rosenbergs* (2001); NIGEL WEST and OLEG TSAREV, *The Crown Jewels* (1999); and OLEG KALUGIN, *The First Directorate* (1994). KGB activities in the United States is the subject of JOHN HAYNES and HARVEY KLEHR, *VENONA: Decoding Soviet Espionage in America* (1999). PAVEL SUDOPLATOV, *Special Tasks*, updated ed. (1995), contains interesting details about life within Stalin's KGB but must be used with caution, because much of it is based on KGB myths and is not supported by Soviet documents declassified since the breakup of the Soviet Union.

Robert W. Pringle

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Titanic

Encyclopædia Britannica Article

Introduction

in full Royal Mail Ship (RMS) Titanic



The *Titanic*.

British luxury passenger liner that sank on April 14-15, 1912, during its maiden voyage, en route to New York City from Southampton, England, killing about 1,500 (see Researcher's Note: Titanic) passengers and ship personnel. One of the most famous tragedies in modern history, it has inspired numerous stories, several films, and a musical and been the subject of much scholarship and scientific speculation.



Diagram of the *Titanic*.

Origins and construction

In the early 1900s the transatlantic passenger trade was highly profitable and competitive, with ship lines vying to transport wealthy travelers and immigrants. Two of the chief lines were White Star and Cunard. By the summer of 1907, Cunard seemed poised to increase its share of the market with the debut of two new ships, the *Lusitania* and the *Mauretania*, which were scheduled to enter service later that year. The two passenger liners were garnering much attention for their expected speed; both would later set speed records crossing the Atlantic Ocean. Looking to answer his rival, White Star chairman J. Bruce Ismay reportedly met with William Pirrie, who controlled the Belfast shipbuilding firm Harland and Wolff, which constructed most of White Star's vessels. The two men devised a plan to build a class of large liners that would be known for their comfort instead of their speed. It was eventually decided that three vessels would be constructed: the *Olympic*, the *Titanic*, and the *Britannic*.



Construction of the *Olympic* (right) and the *Titanic* in the shipyard ...

On March 31, 1909, some three months after work began on the *Olympic*, the keel was laid for the *Titanic*. The two ships were built side by side in a specially constructed gantry that could accommodate their unprecedented size. The sister ships were largely designed by Thomas Andrews of Harland and Wolff. In addition to ornate decorations, the *Titanic* featured an immense first-class dining saloon, four elevators, and a swimming pool. Its second-class accommodations were comparable to first-class features on other ships, and its third-class offerings, although modest, were still noted for their relative comfort.

As to safety elements, the *Titanic* had 16 compartments that included doors which

could be closed from the bridge, so that water could be contained in the event the hull was breached. Although they were presumed to be watertight, the bulkheads were not capped at the top. The ship's builders claimed that four of the compartments could be flooded without endangering the liner's buoyancy. The system led many to claim that the *Titanic* was unsinkable.

Following completion of the hull and main superstructure, the *Titanic* was launched on May 31, 1911. It then began the fitting-out phase, as machinery was loaded into the ship and interior work began. After the *Olympic's* maiden voyage in June 1911, slight changes were made to the *Titanic's* design. In early April 1912 the *Titanic* underwent its sea trials, after which the ship was declared seaworthy.

As it prepared to embark on its maiden voyage, the *Titanic* was one of the largest and most opulent ships in the world. It had a gross registered tonnage (i.e., carrying capacity) of 46,328 tons, and when fully laden the ship displaced (weighed) more than 52,000 tons. The *Titanic* was approximately 882.5 feet (269 metres) long and about 92.5 feet (28.2 metres) wide at its widest point.

Maiden voyage

On April 10, 1912, the *Titanic* set sail on its maiden voyage, traveling from Southampton, England, to New York City. Nicknamed the “Millionaire's Special,” the ship was fittingly captained by Edward J. Smith, who was known as the “Millionaire's Captain” because of his popularity with wealthy passengers. Indeed, onboard were a number of prominent people, including American businessman Benjamin Guggenheim, British journalist William Thomas Stead, and Macy's department store co-owner Isidor Straus and his wife, Ida. In addition, Ismay and Andrews were also traveling on the *Titanic*.

The voyage nearly began with a collision, however, when suction from the *Titanic* caused the docked *New York* to swing into the giant liner's path. After an hour of maneuverings to prevent the accident, the *Titanic* was under way. On the evening of April 10 the ship stopped at Cherbourg, France. The city's dock was too small to accommodate the *Titanic*, so passengers had to be ferried to and from the ship in tenders. Among those boarding were John Jacob Astor and his pregnant second wife, Madeleine, and Molly Brown. After some two hours the *Titanic* resumed its journey. On the morning of April 11 the liner made its last scheduled stop in Europe, at Queenstown (Cobh), Ireland. At approximately 1:30 PM the ship set sail for New York City. Onboard were some 2,200 people, approximately 1,300 of whom were passengers.

Final hours

Throughout much of the voyage, the wireless radio operators on the *Titanic*, Jack Phillips and Harold Bride, had been receiving iceberg warnings, most of which were passed along to the bridge. The two men worked for the Marconi Company, and much of their job was relaying passengers' messages. On the evening of April 14 the *Titanic* began to approach an area known to have icebergs. Smith slightly altered the ship's course to head farther south. However, he maintained the ship's speed of some 22 knots. At approximately 9:40 PM the *Mesaba* sent a warning of an ice field. The message was never relayed to the *Titanic's* bridge. At 10:55 PM the nearby

Leyland liner *Californian* sent word that it had stopped after becoming surrounded by ice. Phillips, who was handling passenger messages, scolded the *Californian* for interrupting him.

Two lookouts, Frederick Fleet and Reginald Lee, were stationed in the crow's nest of the *Titanic*. Their task was made difficult by the fact that the ocean was unusually calm that night: because there would be little water breaking at its base, an iceberg would be more difficult to spot. In addition, the crow's nest's binoculars were missing. At approximately 11:40 PM, about 400 nautical miles (740 km) south of Newfoundland, Canada, an iceberg was sighted, and the bridge was notified. First Officer William Murdoch ordered both the ship "hard-a-starboard" (to the left) and the engines reversed. The *Titanic* began to turn, but it was too close to avoid a collision. The ship's starboard side scraped along the iceberg. At least five of its supposedly watertight compartments toward the bow were ruptured. After assessing the damage, Andrews determined that, as the ship's forward compartments filled with water, its bow would drop deeper into the ocean, causing water from the ruptured compartments to spill over into each succeeding compartment, thereby sealing the ship's fate. The *Titanic* would founder. (By reversing the engines, Murdoch actually caused the *Titanic* to turn slower than if it had been moving at its original speed. Most experts believe the ship would have survived if it had hit the iceberg head-on.)

Smith ordered Phillips to begin sending distress signals, one of which reached the *Carpathia* at approximately 12:20 AM on April 15, and the Cunard ship immediately headed toward the stricken liner. However, the *Carpathia* was some 58 nautical miles (107 km) away when it received the signal, and it would take more than three hours to reach the *Titanic*. Other ships also responded, including the *Olympic*, but all were too far away. A vessel was spotted nearby, but the *Titanic* was unable to contact it. The *Californian* was also in the vicinity, but its wireless had been turned off for the night.



Titanic survivors in a lifeboat.

As attempts were made to contact nearby vessels, the lifeboats began to be launched, with orders of women and children first. Although the *Titanic's* number of lifeboats exceeded that required by the British Board of Trade, its 20 boats could carry only 1,178 people, far short of the total number of passengers. This problem was exacerbated by lifeboats being launched well below capacity, because crewmen worried that the davits would not be able to support the weight of a fully loaded boat. (The *Titanic* had canceled its scheduled lifeboat drill earlier in the day, and the crew was unaware that the davits had been tested in Belfast.) Lifeboat number 7, which was the first to leave the *Titanic*, held only about 27 people, though it had space for 65. In the end, only 705 people would be rescued in lifeboats.

As the *Titanic's* bow continued to sink, the stern began to rise out of the water, placing incredible strain on the midsection. At approximately 2:18 AM the *Titanic* broke in two, with the bow going underwater. At 2:20 AM the ship foundered as the stern section also disappeared beneath the Atlantic. Hundreds of passengers and crew went into the icy water. Fearful of being swamped, those in the lifeboats delayed returning to pick up survivors. By the time they rowed back, almost all the people in the water had died from exposure. In the end, more than 1,500 perished. Aside from the crew, which had about 700 fatalities, third class suffered the greatest loss: of approximately 710, only some 174 survived. (Subsequent claims

that passengers in steerage were prevented from boarding boats, however, were largely dispelled. Given Smith's failure to sound a general alarm, some third-class passengers did not realize the direness of the situation until it was too late. Many women also refused to leave their husbands and sons, while the difficulty of simply navigating the complex *Titanic* from the lower levels caused some to reach the top deck after most of the lifeboats had been launched.)

Rescue



Titanic survivors aboard the *Carpathia*, April 1912.

The *Carpathia* arrived in the area at approximately 3:30 AM, more than an hour after the *Titanic* sank. Lifeboat number 2 was the first to reach the liner. Over the next several hours the *Carpathia* picked up all survivors. At approximately 8:30 AM the *Californian* arrived, having heard the news some three hours earlier. Shortly before 9:00 AM the *Carpathia* headed for New York City, where it arrived to massive crowds on April 18.

Aftermath and investigation

Although the majority of dead were crew members and third-class passengers, many of the era's wealthiest and most prominent families lost members, among them Isidor and Ida Straus and John Jacob Astor. In the popular mind, the glamour associated with the ship, its maiden voyage, and its notable passengers magnified the tragedy of its sinking. Legends arose almost immediately about the night's events, those who had died, and those who survived. Heroes and heroines—such as American Molly Brown, who helped command a lifeboat, and Capt. Arthur Henry Rostron of the *Carpathia*—were identified and celebrated by the press. Others—notably White Star chairman J. Bruce Ismay, who had found space in a lifeboat and survived—were vilified. There was a strong desire to explain the tragedy, and inquiries into the sinking were held in the United States and Great Britain.

U.S. inquiry

The U.S. investigation, which lasted from April 19 to May 25, 1912, was led by Sen. William Alden Smith. In all, more than 80 people were interviewed. Notable witnesses included Second Officer Charles Lightoller, the most senior officer to survive. He defended the actions of his superiors, especially Captain Smith's refusal to decrease the ship's speed. Many passengers testified to the general confusion on the ship. A general warning was never sounded, causing a number of passengers and even crew members to be unaware of the danger for some time. In addition, because a scheduled lifeboat drill had never been held, the lowering of the boats was often haphazard.

Perhaps the most-scrutinized testimony came from the crew of the *Californian*, who claimed their ship was some 20 nautical miles (37 km) from the *Titanic*. Crew members saw a ship but said it was too small to be the *Titanic*. They also stated that it was moving and that efforts to contact it by Morse lamp were unsuccessful. After sighting rockets in the distance, the crew informed Capt. Stanley Lord, who had retired for the night. Instead of ordering the ship's wireless operator to turn on

the radio, Lord instead told the men to continue to use the Morse lamp. By 2:00 AM the nearby ship had reportedly sailed away.

In the end, the U.S. investigation faulted the British Board of Trade, “to whose laxity of regulation and hasty inspection the world is largely indebted for this awful fatality.” Other contributing causes were also noted, including the failure of Captain Smith to slow the *Titanic* after receiving ice warnings. However, perhaps the strongest criticism was levied at Captain Lord and the *Californian*. The committee found that the ship was “nearer the *Titanic* than the 19 miles reported by her Captain, and that her officers and crew saw the distress signals of the *Titanic* and failed to respond to them in accordance with the dictates of humanity, international usage, and the requirements of law.”

British inquiry

In May 1912 the British inquiry began. It was overseen by the British Board of Trade, the same agency that had been derided by U.S. investigators for the insufficient lifeboat requirements. The presiding judge was Sir John Charles Bigham, Lord Mersey. Little new evidence was discovered during the 28 days of testimony. The final report stated that “the loss of the said ship was due to collision with an iceberg, brought about by the excessive speed at which the ship was being navigated.” However, Mersey also stated that he was “not able to blame Captain Smith...he was doing only that which other skilled men would have done in the same position.” Captain Lord and the *Californian*, however, drew sharp rebuke. The British investigators claimed that the liner was some 5-10 nautical miles (9-19 km) from the *Titanic* and that “she might have saved many, if not all, of the lives that were lost.”

Both the U.S. and British investigations also proposed various safety recommendations, and in 1913 the first International Conference for Safety of Life at Sea was called in London. The conference drew up rules requiring that every ship have lifeboat space for each person embarked; that lifeboat drills be held for each voyage; and, because the *Californian* had not heard the distress signals of the *Titanic*, that ships maintain a 24-hour radio watch. The International Ice Patrol was established to warn ships of icebergs in the North Atlantic shipping lanes and to break up ice.

The *Californian* incident

The U.S. and British inquiries did little to end speculation and debate concerning the sinking of the *Titanic*. Particular focus centred on the *Californian*. Supporters of Lord, nicknamed “Lordites,” believed that the captain had been unfairly criticized. They held that a third ship—possibly the *Samson*, a Norwegian boat illegally hunting seals—was between the Leyland liner and the *Titanic*. That view eventually gained much support. Crew members of the *Californian* did not hear rockets being fired, though the sounds would have been audible if the ship had been within the distances claimed by U.S. and British investigators. In addition, people aboard the *Titanic* stated that a vessel was headed in their direction, which could not have been *Californian*, which was stopped at the time. While the true location of the *Californian* will likely never be conclusively known, many experts believe it was actually some 20 miles (37 km) away and would not have reached the *Titanic* before

it sank. However, Lord has continued to draw criticism for his failure to take more action in response to the distress signals.

Discovery and legacy



The bow of the *Titanic*, photographed by the remotely operated vehicle (ROV) ...

Within days of the *Titanic's* sinking, talk began of finding the wreck. Given the limits of technology, however, serious attempts were not undertaken until the second half of the 20th century. In August 1985 Robert Ballard led an American-French expedition from aboard the U.S. Navy research ship *Knorr*. The quest was partly a means for testing the *Argo*, a 16-foot (5-metre) submersible sled equipped with a remote-controlled camera that could transmit live images to a monitor. The submersible was sent some 13,000 feet (4,000 metres) to the floor of the Atlantic Ocean, sending video back to the *Knorr*. On September 1, 1985, the first underwater images of the *Titanic* were recorded as its giant boilers were discovered. Later video showed the ship lying upright in two pieces. While the bow was clearly recognizable, the stern section was severely damaged. Covering the wreckage were rust-coloured stalactite-like formations. Scientists later determined that the rusticles, as they were named, were created by iron-eating microorganisms, which are consuming the wreck.



Rusticles covering the pipes and bathtub from Capt. Edward J. Smith's cabin, photographed during a ...

The *Titanic*—located at about 41° 43'57" N, 49° 56'49" W (bow section), some 13 nautical miles (24 km) from the position given in its distress signals—was explored numerous times by manned and unmanned submersibles. The expeditions found no sign of the long gash previously thought to have been ripped in the ship's hull by the iceberg. Scientists instead discovered that the collision's impact had produced a series of thin gashes as well as brittle

fracturing and separation of seams in the adjacent hull plates, thus allowing water to flood in and sink the ship. In subsequent years, marine salvagers raised small artifacts from the wreckage as well as pieces of the ship itself, including a large section of the hull. Examination of these parts—as well as paperwork in the builder's archives—led to speculation that low-quality steel or weak rivets may have contributed to the *Titanic's* sinking.



(From left) Kate Winslet, Leonardo DiCaprio, and James Cameron on the set of the film ...

Countless renditions, interpretations, and analyses of the *Titanic* disaster transformed the ship into a cultural icon. In addition to being the subject of numerous books, the ship inspired various movies, notably *A Night to Remember* (1958) and James Cameron's blockbuster *Titanic* (1997). In the late 20th and early 21st centuries, artifacts from the ship formed the basis of a highly successful exhibit that toured the world, and a profitable business was developed transporting tourists to the *Titanic's* wreck. Several museums dedicated to the liner draw thousands of visitors each year. Although the wreck of the *Titanic* will eventually deteriorate, the famed liner seems unlikely to fade from the

public imagination.

Amy Tikkanen

Additional Reading

Two classic accounts of the disaster, written by the doyen of *Titanic* scholarship, are WALTER LORD, *A Night to Remember* (1955, reprinted 1988), and *The Night Lives On* (1986). More recent accounts are MICHAEL DAVIE, *Titanic: The Death and Life of a Legend* (1987; also published as *The Titanic: The Full Story of a Tragedy*, 1986); DONALD LYNCH and KEN MARSCHALL, *Titanic: An Illustrated History* (1992); and JOHN P. EATON and CHARLES A. HAAS, *Titanic: Triumph and Tragedy*, 2nd ed. (1994), and *Titanic: Destination Disaster*, rev. ed. (1996). Two books that trace the changing image of the *Titanic* in 20th-century popular culture are PAUL HEYER, *Titanic Legacy: Disaster as Media Event and Myth* (1995); and STEVEN BIEL, *Down with the Old Canoe: A Cultural History of the Titanic Disaster* (1996). A first-hand account by the oceanographer who found the ship's wreckage in 1985 is ROBERT D. BALLARD and RICK ARCHBOLD, *The Discovery of the Titanic*, new and updated ed. (1995). *Titanic: Legacy of the World's Greatest Ocean Liner* (1997) is a lavishly illustrated popularization. Theories concerning why the liner sank are discussed in TIM FOECKE and JENNIFER HOOPER MCCARTY, *What Really Sank the Titanic: New Forensic Discoveries* (2008); and BRAD MATSEN, *Titanic's Last Secrets* (2008).

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unidentified flying object (UFO)

Encyclopædia Britannica Article

Introduction

also called flying saucer

any aerial object or optical phenomenon not readily identifiable to the observer. UFOs became a major subject of interest following the development of rocketry after World War II and were thought by some researchers to be intelligent extraterrestrial life visiting Earth.

History

Flying saucers and Project Blue Book

The first well-known UFO sighting occurred in 1947, when businessman Kenneth Arnold claimed to see a group of nine high-speed objects near Mount Rainier in Washington while flying his small plane. Arnold estimated the speed of the crescent-shaped objects as several thousand miles per hour and said they moved "like saucers skipping on water." In the newspaper report that followed, it was mistakenly stated that the objects were saucer-shaped, hence the term *flying saucer*.

Sightings of unidentified aerial phenomena increased, and in 1948 the U.S. Air Force began an investigation of these reports called Project Sign. The initial opinion of those involved with the project was that the UFOs were most likely sophisticated Soviet aircraft, although some researchers suggested that they might be spacecraft from other worlds, the so-called extraterrestrial hypothesis (ETH). Within a year, Project Sign was succeeded by Project Grudge, which in 1952 was itself replaced by the longest-lived of the official inquiries into UFOs, Project Blue Book, headquartered at Wright-Patterson Air Force Base in Dayton, Ohio. From 1952 to 1969 Project Blue Book compiled reports of more than 12,000 sightings or events, each of which was ultimately classified as (1) "identified" with a known astronomical, atmospheric, or artificial (human-caused) phenomenon or (2) "unidentified." The latter category, approximately 6 percent of the total, included cases for which there was insufficient information to make an identification with a known phenomenon.

The Robertson Panel and the Condon Report

An American obsession with the UFO phenomenon was under way. In the hot summer of 1952 a provocative series of radar and visual sightings occurred near National Airport in Washington, D.C. Although these events were attributed to temperature inversions in the air over the city, not everyone was convinced by this explanation. Meanwhile, the number of UFO reports had climbed to a record high. This led the

Central Intelligence Agency to prompt the U.S. government to establish an expert panel of scientists to investigate the phenomena. The panel was headed by H.P. Robertson, a physicist at the California Institute of Technology in Pasadena, Calif., and included other physicists, an astronomer, and a rocket engineer. The Robertson Panel met for three days in 1953 and interviewed military officers and the head of Project Blue Book. They also reviewed films and photographs of UFOs. Their conclusions were that (1) 90 percent of the sightings could be easily attributed to astronomical and meteorologic phenomena (e.g., bright planets and stars, meteors, auroras, ion clouds) or to such earthly objects as aircraft, balloons, birds, and searchlights, (2) there was no obvious security threat, and (3) there was no evidence to support the ETH. Parts of the panel's report were kept classified until 1979, and this long period of secrecy helped fuel suspicions of a government cover-up.

A second committee was set up in 1966 at the request of the Air Force to review the most interesting material gathered by Project Blue Book. Two years later this committee, which made a detailed study of 59 UFO sightings, released its results as *Scientific Study of Unidentified Flying Objects*—also known as the Condon Report, named for Edward U. Condon, the physicist who headed the investigation. The Condon Report was reviewed by a special committee of the National Academy of Sciences. A total of 37 scientists wrote chapters or parts of chapters for the report, which covered investigations of the 59 UFO sightings in detail. Like the Robertson Panel, the committee concluded that there was no evidence of anything other than commonplace phenomena in the reports and that UFOs did not warrant further investigation. This, together with a decline in sighting activity, led to the dismantling of Project Blue Book in 1969.

Other investigations of UFOs

Despite the failure of the ETH to make headway with the expert committees, a few scientists and engineers, most notably J. Allen Hynek, an astronomer at Northwestern University in Evanston, Ill., who had been involved with projects Sign, Grudge, and Blue Book, concluded that a small fraction of the most-reliable UFO reports gave definite indications for the presence of extraterrestrial visitors. Hynek founded the Center for UFO Studies (CUFOS), which continues to investigate the phenomenon.

Aside from Project Blue Book, the only other official and fairly complete records of UFO sightings were kept in Canada, where they were transferred in 1968 from the Canadian Department of National Defense to the Canadian National Research Council. The Canadian records comprised about 750 sightings. Less-complete records have been maintained in the United Kingdom, Sweden, Denmark, Australia, and Greece. In the United States, CUFOS and the Mutual UFO Network in Bellvue, Colo., continue to log sightings reported by the public.

In the Soviet Union, sightings of UFOs were often prompted by tests of secret military rockets. In order to obscure the true nature of the tests, the government sometimes encouraged the public's belief that these rockets might be extraterrestrial craft but eventually decided that the descriptions themselves might give away too much information. UFO sightings in China have been similarly provoked by military activity that is unknown to the public.

Possible explanations for UFO sightings and alien abductions

UFO reports have varied widely in reliability, as judged by the number of witnesses, whether the witnesses were independent of each other, the observing conditions (e.g., fog, haze, type of illumination), and the direction of sighting. Typically, witnesses who take the trouble to report a sighting consider the object to be of extraterrestrial origin or possibly a military craft but certainly under intelligent control. This inference is usually based on what is perceived as formation flying by sets of objects, unnatural—often sudden—motions, the lack of sound, changes in brightness or colour, and strange shapes.

That the unaided eye plays tricks is well known. A bright light, such as the planet Venus, often appears to move. Astronomical objects can also be disconcerting to drivers, as they seem to “follow” the car. Visual impressions of distance and speed of UFOs are also highly unreliable because they are based on an assumed size and are often made against a blank sky with no background object (clouds, mountains, etc.) to set a maximum distance. Reflections from windows and eyeglasses produce superimposed views, and complex optical systems, such as camera lenses, can turn point sources of light into apparently saucer-shaped phenomena. Such optical illusions and the psychological desire to interpret images are known to account for many visual UFO reports, and at least some sightings are known to be hoaxes. Radar sightings, while in certain respects more reliable, fail to discriminate between artificial objects and meteor trails, ionized gas, rain, or thermal discontinuities in the atmosphere.

“Contact events,” such as abductions, are often associated with UFOs because they are ascribed to extraterrestrial visitors. However, the credibility of the ETH as an explanation for abductions is disputed by most psychologists who have investigated this phenomenon. They suggest that a common experience known as “sleep paralysis” may be the culprit, as this causes sleepers to experience a temporary immobility and a belief that they are being watched.

Seth Shostak

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Bermuda Triangle

Encyclopædia Britannica Article



The USS *Cyclops*—pictured here in the Hudson River, New York, in ...

section of the North Atlantic Ocean off North America in which more than 50 ships and 20 airplanes are said to have mysteriously disappeared. The area, whose boundaries are not universally agreed upon, has a vaguely triangular shape marked by the southern U.S. coast, Bermuda, and the Greater Antilles.

Reports of unexplained occurrences in the region date to the mid-19th century. Some ships were discovered completely abandoned for no apparent reason; others transmitted no distress signals and were never seen or heard from again. Aircraft have

been reported and then vanished, and rescue missions are said to have vanished when flying in the area. However, wreckage has not been found, and some of the theories advanced to explain the repeated mysteries have been fanciful. Although theories of supernatural causes for these disappearances abound, geophysical and environmental factors are most likely responsible. One hypothesis is that pilots failed to account for the agonic line—the place at which there is no need to compensate for magnetic compass variation—as they approached the Bermuda Triangle, resulting in significant navigational error and catastrophe. Boaters and fliers continue to venture through the triangle without event.

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mummy

Encyclopædia Britannica Article

body embalmed, naturally preserved, or treated for burial with preservatives after the manner of the ancient Egyptians. The process varied from age to age in Egypt, but it always involved removing the internal organs (though in a late period they were replaced after treatment), treating the body with resin, and wrapping it in linen bandages. Among the many other peoples who practiced mummification were the people living along the Torres Strait, between Papua New Guinea and Australia, and the Incas of South America.

There was a widespread belief that Egyptian mummies were prepared with bitumen (the word comes from the Arabic *mūmiyah* 'bitumen'), which was supposed to have medicinal value. Throughout the Middle Ages, "mummy," made by pounding mummified bodies, was a standard product of apothecary shops. In course of time it was forgotten that the virtue of mummy lay in the bitumen, and spurious mummy was made from the bodies of felons and suicides. The traffic in mummy continued in Europe until the 18th century.

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ghost

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A magician raising a ghost, illustration by W. Raphael from *The Astrologer of the Nineteenth* ...

soul or spectre of a dead person, usually believed to inhabit the netherworld and to be capable of returning in some form to the world of the living. According to descriptions or depictions provided by believers, a ghost may appear as a living being or as a nebulous likeness of the deceased or, occasionally, in other forms. Belief in ghosts is based on the ancient notion that a human spirit is separable from the body and may maintain its existence after the body's death. In many societies, funeral rituals are believed to prevent the ghost from haunting the living.

A place that is haunted is thought to be associated by the haunting spirit with some strong emotion of the past—remorse, fear, or the terror of a violent death. Individuals who are haunted are believed to be responsible for, or associated with, the ghost's unhappy past experience (*compare* possession). The traditional

visual manifestations of haunting include ghostly apparitions, the displacement of objects, or the appearance of strange lights; auditory signs include disembodied laughter and screams, footsteps, ringing bells, and the spontaneous emanation of sounds from musical instruments.

Tales of specific ghosts are still common in living folklore worldwide. The telling of elaborate grisly ghost stories, often in a setting enhanced by darkness or a thunderstorm, is a popular pastime in many groups, particularly among children. *See also* ghou; kobold; poltergeist.

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