

Grids & Datums

GIBRALTAR

by Clifford J. Mugnier, C.P., C.M.S.

Captured and fortified by Ṭāriq ibn Ziyād, Moorish invader of Spain, in 711 A.D., Gibraltar was later taken by the Spanish in 1462. It was then captured by the British in 1704 during the War of Spanish Succession (*Merriam-Webster's Geographical Dictionary*, 3rd edition, 1997). “Strategically important, Gibraltar was reluctantly ceded to Great Britain by Spain in the 1713 Treaty of Utrecht; the British garrison was formally declared a colony in 1830. In a referendum held in 1967, Gibraltarians voted overwhelmingly to remain a British dependency. The subsequent granting of autonomy in 1969 by the UK led to Spain closing the border and severing all communication links. A series of talks were held by the UK and Spain between 1997 and 2002 on establishing temporary joint sovereignty over Gibraltar. In response to these talks, the Gibraltar Government called a referendum in late 2002 in which the majority of citizens voted overwhelmingly against any sharing of sovereignty with Spain. Since the referendum, tripartite talks on other issues have been held with Spain, the UK, and Gibraltar, and in September 2006 a three-way agreement was signed. Spain agreed to remove restrictions on air movements, to speed up customs procedures, to implement international telephone dialing, and to allow mobile roaming agreements. Britain agreed to pay increased pensions to Spaniards who had been employed in Gibraltar before the border closed. Spain will be allowed to open a cultural institute from which the Spanish flag will fly. A new non-colonial constitution came into effect in 2007, but the UK retains responsibility for defense, foreign relations, internal security, and financial stability” (*World Factbook*, 2009). Slightly less than one-half the area of Rhode Island, Gibraltar is bordered by Spain (1.2 km) (*PE&RS*, July 2000). The lowest point is the Mediterranean Sea, (0 m), and the highest point is the Rock of Gibraltar (426 m).

In regard to its economy, “Self-sufficient Gibraltar benefits from an ex-

tensive shipping trade, offshore banking, and its position as an international conference center. The British military presence has been sharply reduced and now contributes about 7% to the local economy, compared with 60% in 1984. The financial sector, tourism (almost 5 million visitors in 1998), shipping services fees, and duties on consumer goods also generate revenue. The financial sector, the shipping sector, and tourism each contribute 25%-30% of GDP. Telecommunications accounts for another 10%. In recent years, Gibraltar has seen major structural change from a public to a private sector economy, but changes in government spending still have a major impact on the level of employment” (*World Factbook*, 2009).

According to the *Bundesamt für Kartographie und Geodäsie* (Federal Office for Cartography and Geodesy), *Außenstelle* (Branch) *Leipzig*, Information and Service System for European Coordinate Reference Systems, *Karl-Rothe-Straße* 10-14, D-04105 Leipzig, the transformation **from** European Datum 1950 **to** WGS 84 Datum is: $\Delta X = -116.8 \text{ m} \pm 1 \text{ m}$, $\Delta Y = -106.4 \text{ m} \pm 1 \text{ m}$, $\Delta Z = -154.4 \text{ m} \pm 1 \text{ m}$. Of course, the ellipsoid of reference for the European Datum of 1950 is the International 1924 where: $a = 6,378,388 \text{ m}$, $1/f = 297$. The *BKG* comments: “Although there is a large scale and orientation error, the small area of Gibraltar makes a 3 parameter shift acceptable at 1 m accuracy. Otherwise very large shifts and rotations will result.” The only grid extant is the UTM.



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