Japan was inhabited by humans as early as 30,000 B.C. Its written history began in the 5th century A.D., after it adopted handwriting from the Chinese culture. Buddhism was introduced circa 552, and Japan closely imitated Chinese institutions during the sixth to ninth centuries. First visited by the Portuguese in 1542-43, European influences had little effect on religion; Shintoists and Buddhists represent 84 percent of the current population and Christianity is practiced by less than one percent. For several hundred years, the Portuguese had far greater influence than the later English and Dutch trading companies. Commodore Mathew Perry, USN, secured the first commercial treaty in 1853. The “Land of the Rising Sun” is a constitutional monarchy with a parliamentary government. There are 47 prefectures. Japan’s independence dates back to 660 B.C. (traditional founding by Emperor Jimmu), and its constitution is dated 03 May 1947.

Comprised of four main islands—Honshū, Shikoku, Kyūshū, and Hokkaidō—Japan also includes the Bonin Islands (Ogasawara-Gunto), Daitō-Shoto, Minami-Jima, Okino-tori-Shima, Ryukyu Islands (Nansei-Shoto), and Volcano Islands (Kazan-Retto). Japan is mostly mountainous; the lowest point is Fuji-Yama at 3,776 m, and both places are on the island of Honshū. In 869, the Survey Division of the Ministry of Civil Services was established. In 1888, the Imperial Land Survey of the Army General Staff absorbed the Survey Division and carried out the fundamental surveying and mapping of the entire Japanese Empire. The Tokyo Datum of 1892 was established at the Azabu Observatory, a military use, the Japanese Imperial Land Survey (JILS) used a conformal double transverse Mercator grid known as the Gauss-Schreiber Transverse Mercator grid from about 1892 to 1921. That's the same formulae that the U.S. Coast & Geodetic Survey chose for the TM zones on the North American Datum of 1927. The multiple belt system defined the East Belt origin as φ = 36° 03′ 34.9523′′ N and λ = 139° 44′ 40.5020′′ E, where the X axis began at the meridian crossing the transit circle at Tokyo Observatory. The East Belt covered the area south of 31° where the Formosa 121°. All zones use a unity Scale Factor, and False coordinates were used, but the only one I have is for zone 2 where

**This North Belt was also used in Karafuto, the southern half of Sakhalin Island invaded during the Russo-Japanese War of 1904-1905 and occupied by the Japanese until after WW II.**
Thanks to Professor Kazuo Kobayashi of the Survey College of Kinki, there have been some new additions to the "Grids of the Public Survey." Hager later pored over some maps to identify the likely areas of coverage. For Zone 14, **φ₀ = 26° 00' N and λ₀ = 142° 00' E**, and appears to be for the Bonin Islands (Ogasawara-Gunto) and Volcano Islands (Kazan-Retto). For Zone 15, **φ₀ = 26° 00' N and λ₀ = 127° 00' E**, and appears to be for Okinawa Gunto and Amami Gunto. For Zone 16, **φ₀ = 26° 00' N and λ₀ = 124° 00' E**, and appears to be for Sakishima Gunto. For Zone 17, **φ₀ = 26° 00' N and λ₀ = 131° 00' E**, and appears to be for the Daito Islands (Kita Daito Jima and Okino Daito Jima). For Zone 18, **φ₀ = 20° 00' N and λ₀ = 136° 00' E**, and appears to be for Parece Vela. For Zone 19, **φ₀ = 26° 00' N and λ₀ = 154° 00' E**, and appears to be for Marcus (Minami Tori Shima).

In 1985, Toshiyuki Shilina, general manager of the Geodetic Surveying Department of the Aero Asahi Corporation, wrote to me of the special grid he devised for the Seikan Tunnel Project. (The project was the longest tunnel under the seabed in the world at the time.) Because the tunnel spanned two Public coordinate grids between the Main Island of Honshū and the northern island of Hokkaidō, he chose to define his own special purpose grid for the project based on the Gauss-Krüger Transverse Mercator projection. Shilina also chose a scale factor at origin, **m₀ = 0.9999** and the projection origin at **φ₀ = 41° 10' N and λ₀ = 140° 10' E**.

The GSI reports that it is moving the country to the Japanese Geodetic Datum 2000 (JGD2000). The National Imagery and Mapping Agency (NIMA) reports in Technical Report 8350.2 (January, 2000) that the transformation (for Japan) from Tokyo 1918 to WGS84 is **Δa = 739.845 km, Δx = ±685 m, Δy = ±685 m, and Δz = ±685 m**.

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