

Thomas Cook & Son's Vesuvius Railway

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Features

In *The Business of Travel*, a book published in 1891 to mark Thomas Cook & Son's Golden Jubilee, W. Fraser Rae wrote that there were 580,397 km of railways in the world, of which Thomas Cook could issue tickets for 555,030. However, when it came to owning railways, the picture was rather different. The length of line owned by the firm in 1891 was less than 1 km—the funicular up Mt. Vesuvius in Italy. By 1903, 8 more kilometers had been added, and the total remained unchanged until December 1945, when it dropped to zero. This article, which is based on primary source materials from the Thomas Cook Archives, as well as a number of previously-published accounts, attempts to trace the development of Cook's Vesuvius Railway. Mt. Vesuvius (Monte Vesuvio) is an active volcano rising above the Bay of Naples on the plain of Campania in southern Italy. The present height of the cone is 1289 m, but it changes considerably after each major eruption. There have been many eruptions in recorded history, the last significant one being in 1944. Scientific study of the volcano began in the late 18th century, but it was not until 1844 that an observatory was built, near Eremo, to keep watch and warn of impending trouble. Despite the risk and fatigue associated with climbing the volcano, the ascent was popular with tourists. Their main complaint was the greed of the local guides whose services, horses and sedan-chairs had to be used for the final ascent.

During the 1870s, a Hungarian tramway promoter named Ernesto Emmanuele Oblieght commissioned an engineering study on a possible funicular railway on the final steep ascent to the summit. The Banco di Roma was willing to back him, but he encountered opposition from the local community, which he bought off by means of an annual payment of £900 (£1 = US\$5 in the late 19th century) plus a tax levied on every passenger. The



Vesuvio, one of the original two 1880 funicular cars

(Thomas Cook Archives)

£16,000 contract was eventually awarded to E. Olivieri of Milan in 1879, but such were the difficulties of the work that the line was not opened to tourists until 6 June 1880. The construction of this funicular railway inspired the Neapolitan song 'Funiculi Funicula'.

The first funicular was a double-track monorail, described in the January 1892 issue of *The Tramway and Railway World*: 'The peculiarity of the railway is found in its single-rail construction, which consists of wooden stringers laid longitudinally and carrying a single rail, upon which ride the central wheels of the car. There are, however, two other rails placed on either side of the sleeper near its base. These side rails are laid at an angle, and are adapted to wheels whose axles project from the floor of the coaches and bear closely against the rails on either side of the sleeper, thus keeping the carriage firmly upright.'

The funicular used two endless cables, driven by a 33-kW steam engine at the lower station and running round pulleys at the top—the line itself was 806-m long, climbed 391 m and the steepest gradient was 63%. There were two cars, named

Etna and *Vesuvio*, each of which had sole use of one track. The cars could carry up to 15 passengers (in addition to the guard) on each trip, and were designed so that the tourists sat comfortably on horizontal benches throughout their 12-minute ride. On busy days, the funicular could carry up to 300 passengers, each paying 20 shillings (£1) for the journey from Naples to the summit of Vesuvius. However, costs were high (coal for the winding engine had to be brought up on horseback) and the concession payments absorbed most of the profits. The enterprise was soon in debt, and by 1886 seemed likely to close.

John Mason Cook, the son of Thomas Cook, had first seen (and used) the Vesuvius funicular in 1882 with his friend William Bemrose, who recorded: 'The toil of climbing up on the loose ashes is so great, that we decided to avail ourselves of the railway notwithstanding the unpleasant look it had.' By 1886, John Mason Cook was organizing tourist parties to Italy on a programme that promised an ascent of Vesuvius, and, to keep faith with his clients, he advanced money (from his own pocket) to keep the funicu-

lar going. In 1887, the original owners gave up and John Mason Cook bought them out, the funicular becoming his personal property. He retained the existing manager, Mr Treiber, a Swiss gentleman, and Thomas Cook & Son became the general agent.

John Mason Cook refused to continue extortionate payments to the guides' group, whereupon they burned down the station, cut the track and threw one of the cars into the crater. He repaired the line, but it was cut again, and so he closed down the whole concern for 6 months, refusing to reopen it until the guides accepted his terms. Eventually they gave in, accepting a fixed fee per passenger, part of an inclusive fare covering a horse-drawn carriage from Naples, ascent of the funicular and guide services at the crater. John Mason Cook extended the road to the base station (charging tolls to non-inclusive passengers) and modernized the funicular, installing a new winding engine and new cables 'in order to ensure perfect safety, comfort and regularity in working'. He even 'enlarged and improved' the restaurant at the lower station, placing it under the management of 'a responsible representative' who was 'bound to provide everything of the best quality at reasonable charges'.

The renewed funicular opened for business in May 1889 and *Baedeker's Guides* were soon rewriting their Vesuvius pages, praising the new railway and saying: 'The thanks of tourists are . . . due to Messrs Cook for the energy with which, in face of serious difficulties, they maintain order and discipline among the guides and others, who have been accustomed for generations to practise extortion upon travellers.'

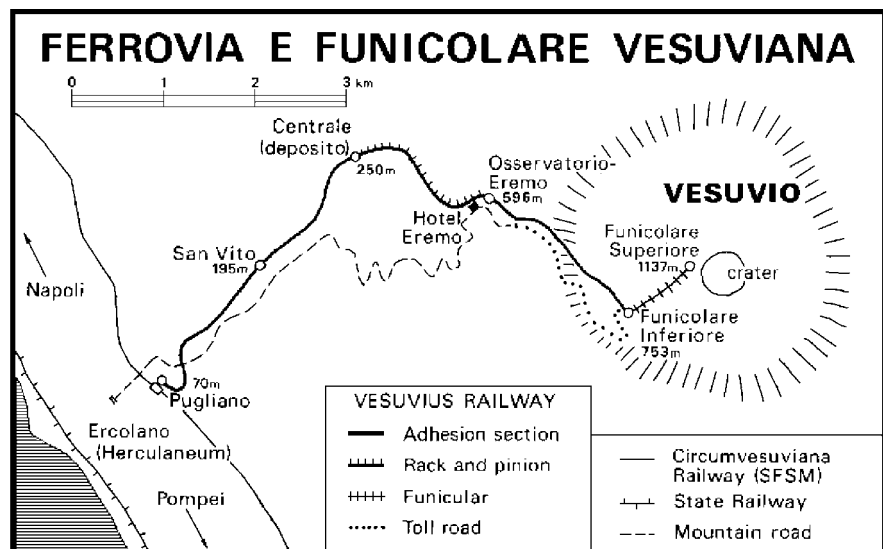
One of the most distinguished passengers on John Mason Cook's revitalized funicular was the Prince of Naples. An account of the visit was reported in *Cook's Excursionist and Tourist Advertiser*: 'Leaving

the barracks of the Maddalena at 1 p.m. in our four-horse breaks, the Royal party reached the summit of the mountain at the Railway Station by 4 p.m. The Prince and party then ascended to within 150 yards [c.137 meters] of the Crater, by the Funicular Railway (the property of Mr John M. Cook), whence they were conducted to the edge of the Crater by the Guides. The Prince was very much impressed and pleased with this, his first visit to Vesuvius, and returning by the Funicular Railway to the Restaurant, deigned to write his name in our register of Travellers.' (Unfortunately, this register is not in the Thomas Cook Archives.) Despite the enthusiasm of the Prince of Naples, the tourist potential was still limited by the slow, steep and costly ascent by horse-drawn carriage, and by the large numbers of beggars, musicians and vendors who pestered tourists. John Mason Cook, by now a rich man, decided in the mid-1890s that the best way to develop the Vesuvius business would be to build a railway from Naples to the lower station of the funicular. He may have been inspired by the 1894-opening of a rival access by private bridge-path from Boscotrecase near Pompei, which en-

abled tourists to visit both Pompei and Vesuvius in one day.

George Noble Fell, engineer of the Snaefell Mountain Railway on the Isle of Man, was engaged as consulting engineer for what was to be known as the Naples and Vesuvius Railway. The plans for this bold project, which survive in the Thomas Cook Archives, reveal that the railway was to be of standard 1435-mm gauge, traversing the Naples suburbs by viaduct and including 7.5 km of Abt rack-and-pinion line to climb the mountain. Steam locomotives would be used, and a concession was granted by the Italian government, whom John Mason Cook paid a substantial deposit, which would be forfeit if the line was not built. Unfortunately, the cost estimate was far too high, even for John Mason Cook, and the capital could not be raised.

At this point, Mr Strub, an engineer of the Swiss Locomotive and Machine Works (SLM) of Winterthur, and Mr Morgenthaler, an engineer of Brown, Boveri & Company of Baden, Switzerland, contacted John Mason Cook with an alternative suggestion that would cut the cost by almost 70%. Taking the newly-opened (1898) Jungfrau Railway



Route of Vesuvius Railway from Pugliano to crater

(Thomas Cook Archives)



The song 'Funiculi Funicula' was inspired by the original funicular line.

(Thomas Cook Archives)

as an example, they proposed that the line should be worked electrically (thus allowing steeper gradients); that the rack portion, reduced to 1.6 km, should be on the cheaper Strub system instead of the Abt; that the track gauge should be 1 m; and that the line should start from Pugliano, at the foot of Mt. Vesuvius, which could easily be reached from Naples by road or by train. The line would thus be only 7.7 km in length, and

would cost just SFr1.25 million (SFr1000 = US\$200 in the late 19th century) rather than the SFr4 million needed to build the Naples-to-Vesuvius line.

John Mason Cook accepted their advice, and detailed plans were deposited with the Italian government just 1 day before the concession was due to expire. The plans were accepted, and in the early part of 1899 John Mason Cook signed contracts with SLM and Brown, Boveri &

Company to build the line. However, he died within a few months and, in order to wind up his estate, the Vesuvius Railway and the new contracts were taken over by the firm of Thomas Cook & Son. Whether Thomas Cook's grandsons (who were then running the firm) were as keen on Vesuvius as their father is doubtful, but contracts had been signed and money had been pledged, so the work went ahead.

The new 7.7-km stretch of railway up Vesuvius was divided into three sections. The first, which began at the Pugliano Terminus, was an ordinary electric railway, with traction obtained by simple adhesion to the rails. With electric traction, it was possible to climb gradients of up to 8%, and the track climbed at this inclination for 4 km through vineyards and past San Vito to the site of the generating station, workshop and car shed. The second section, commencing at the power station, was a Strub rack railway with a maximum gradient of 25%, which was as great as that of the Rigi Railway in Switzerland. The cars were pulled up this section by an electric rack locomotive geared to toothed wheels engaging the rack. At Eremo, the site of the observatory, the railway reverted to the adhesion system, with a maximum gradient of 8%, and climbed to the foot of the funicular itself.

The same cars were used on all three sections of the electric railway (although, as mentioned above, on the middle section they were hauled by a special rack locomotive). They were roughly the size of trams, but with three separate compartments, entered from the side and open above the waistline, with curtains for use against wind or rain. The driving platforms, originally open, were also later given windscreens. A maximum of 24 people could be seated in each car, with an additional six passengers standing on the platform. The initial three cars (numbered 1-3) were built by Schweizer

Waggon AG of Schlieren, Zurich, and (according to hand-painted postcards) were light blue and cream. Each car had four separate braking systems, because of the steep gradients, and took its current (at 550 volts DC) through a bow collector. The first two rack locomotives were built by SLM. They each had two 60-kW motors to drive the rack pinions, with enclosed bodies and two bow collectors, and four independent brakes. (A third rack locomotive was supplied by SLM in 1906.)

In the days before a public electricity supply was available, an electric railway had to generate its own power. At Vesuvius, this was done with gas engines, supplied through a pipe running up the slope from the town gasworks. At the depot, two Brown's patent gas engines were coupled to Brown, Boveri & Company dynamos, arranged in parallel with a bank of Tudor accumulators in such a way that when cars were not taking current, the dynamos would charge the batteries, and these in turn would boost the supply when demand was heavy. The batteries also absorbed current produced by the rack locomotives, which had regenerative braking. Using gas to generate electricity was not the cheapest way, but it avoided hauling coal up the mountain. In later years, it is likely that the line was fed from the public electricity supply, but no details have yet emerged.

The electric railway opened on 28 September 1903 and soon attracted new business. An ascent of Vesuvius, which had previously required a long and tedious carriage drive up the mountain to the funicular station, could now be made without fatigue in less than 1 hour.

The ascent began at Pugliano, from which station the new line ran through a 'cultivated zone' of vineyards ('where grow the grapes from which the famous Lacrima Christi is produced') and of orchards and gardens ('in which oranges and lemons flourish in perfection and

roses and camellias bloom in profusion'). As the line climbed, the houses along the route gradually disappeared and 'charming views' were disclosed. Later, on the steep rack section of the railway, the line passed through 'lovely chestnut and acacia woods' intersected by 'deep and romantic ravines', and views of the Bay of Naples 'even more enchanting than those from the Rigi over the Lake of Lucerne' were presented to the tourists. The railway continued up from Eremo, where the rack section ended, through 'enormous lava and rubble fields, where lava lies all around in the most wonderful shapes', until it reached the foot of the funicular. A few minutes later, the crater itself was reached, and the tourists gazed 'on a picture which will ever be remembered'.

An ascent of Vesuvius, described as 'one of the most fascinating experiences in the world', quickly became an essential part of every tour to Naples. With the opening of the electric railway, the numbers of tourists increased dramatically, and in good weather there would be up to 20 trains each day, starting at 08:20. With 24-seat cars running up and down at 35-minute intervals during busy periods, it

soon became necessary to increase the capacity of the funicular. This was rebuilt in 1904, under a separate contract, with a conventional two-rail (1000-mm gauge) track on a concrete base, the two cars passing via a loop at the mid-point. Electric winding gear was installed, fed by an overhead cable from the depot, and new cars, seating 18 persons and able to carry another six on the platforms, were brought in from Switzerland. They bore the words 'Thos Cook & Son' and 'Ferrovia Vesuviana' on their sides.

In the same year, Thomas Cook & Son decided to build a 25-bedroom hotel at Eremo, roughly halfway up Vesuvius. The hotel was named 'The Hermitage' and the view it commanded was described as being 'so beautiful and fascinating that it may well be doubted if its equal exists in the world'. Situated in the centre of extensive park-like grounds, laid out with shady walks and seats so that visitors could gaze out across the Bay of Naples, the hotel was an ideal residence for those in need of rest. Indeed, the air around the hotel was said to be so 'pure and transparent' that the lungs seemed to 'expand with delight in breathing it'.



Funicular car shortly before 1906 eruption

(Thomas Cook Archives)

Unfortunately, the air around the hotel did not remain 'pure and transparent' for long. On 7 April 1906, Vesuvius struck back with one of the greatest eruptions on record, destroying the top part of the funicular and smothering the whole area in volcanic ash. Despite newspaper reports that they had been 'blotted out of existence', the hotel and electric railway remained intact. Moreover, within 12 days of the eruption, the line between Pugliano and the hotel at Eremo had been dug out from under the ash and service had resumed. However, it was back to horses for the final ascent, and Thomas Cook & Son built a zigzag bridle path from the station to the summit, the ascent taking about 1 hour instead of the 10-minute funicular ride. The event raises interesting questions as to how the funicular was insured—if it was insured at all—because no attempt to rebuild it was made for 3 years.

In 1909, a new funicular track was built slightly to the south of the old one. It opened in 1910, with two new five-bay cars with end-loading platforms, and electric lighting, fed through bow collectors from an overhead wire that also served for bell signals and a telephone. This enabled the line to run after dark, allowing passengers to see the lights of Naples, and for many years, a night excursion was offered from 15 May to 15 September. One new enclosed car (number 4) was obtained for the electric railway, which was extended by 0.4 km to the new funicular on 6 January 1913.

The rebuilt installation was spared further volcanic interruption for 34 years. Traffic developed to a point where larger cars were needed, and in the 1920s, the four electric cars were joined by three larger cars (numbers 5–7), fully enclosed and probably built in Italy. Car number 5 seated 34 passengers, while the newer numbers 6 and 7 were longer, and seated 44. The publicity stressed that the line was the only railway in the world ascend-

ing an active volcano, and it is said that every passenger booked by Thomas Cook to anywhere in central or southern Italy would be issued a Vesuvius Railway coupon, whether wanted or not.

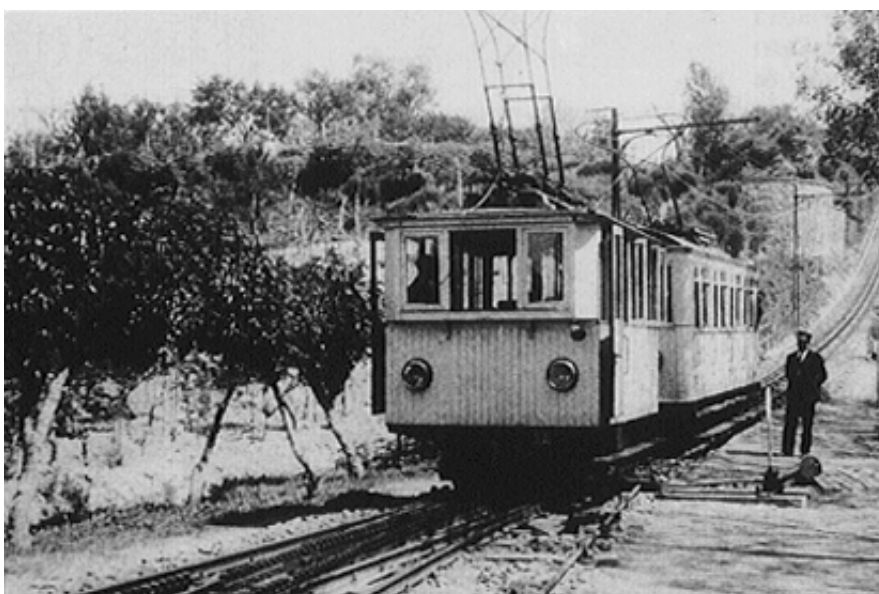
However, the railway was losing money and costs in 1936 were 114% of receipts. Furthermore, increasing nationalism in Italy made it advisable to transfer the line to a locally-registered company, and in 1937, the Vesuvius Railway was handed over to the Società Ferrovia e Funicolare Vesuviana SIA, a Thomas Cook subsidiary. The 1939 Italian timetable shows six regular departures each day from Pugliano, at 08:00, 09:52, 10:25, 14:00, 14:33 and 15:06, the first of which was mainly for staff and supplies. The 08:00, 09:52 and 14:33 ran throughout the year—the others only in summer. When traffic was heavy, two cars would be run together and there were additional departures.

When Italy joined WWII, the line was kept running by the local management, at least until the Allied landings. Shortly afterwards in March 1944, Vesuvius erupted with considerable violence, and the upper part of the funicular was de-

stroyed again. The electric railway did reopen, now under Allied control, but, as on previous occasions, passengers had to walk up the steep path from the station to the crater. Visitors were few, costs rose and the line made a considerable loss.

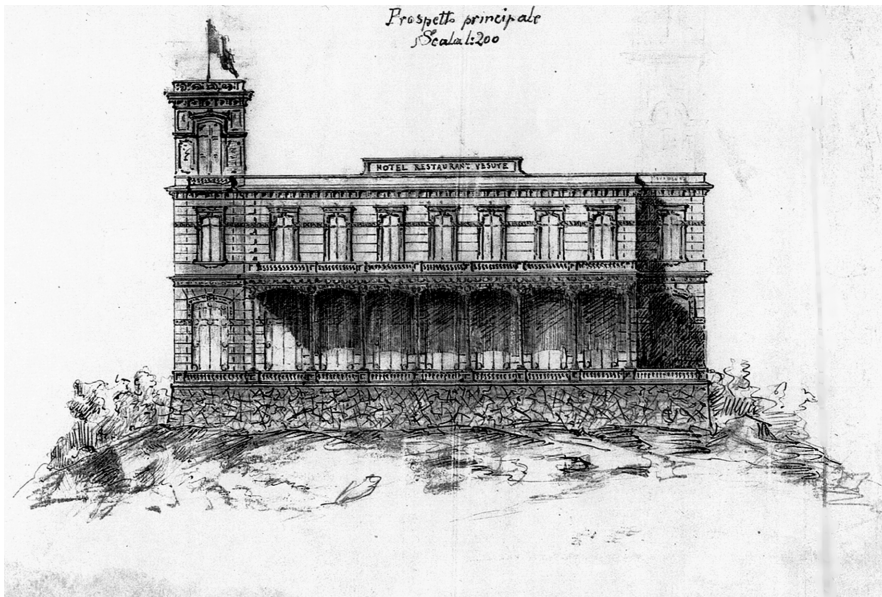
Thomas Cook & Son could see no prospect of finding the money to rebuild the funicular, or of making it profitable, and offered the whole for sale. It was sold in December 1945 to the Strade Ferrate Secondarie Meridionale SpA (SFSM), the company operating the Circumvesuviana Railway, for the sum of 3.1 million lire (L1000 = US\$4.17 in 1946) in cash and shares. Nearly two-thirds of this went to pay the bill presented by the Allied military for keeping the line going, leaving Thomas Cook & Son with a 1.2 million lire shareholding in SFSM shares which rarely, if ever, paid any dividend. The cars and locomotives were given a new coat of cream paint, and continued to run.

The first idea of the new owners was to change the track gauge to their own 950-mm, connect the two lines at Pugliano, and run new 68-seat rack/adhesion elec-



Rack locomotive about to push electric car up steep incline in 1934

(Thomas Cook Archives)



Original drawing of Hermitage Hotel opened in 1904

(Thomas Cook Archives)

tric cars from Naples to the summit. This ambitious plan proved far too expensive, and by the end of 1948, it had been abandoned in favour of building a road to the upper terminus and a chair-lift to the summit. Meanwhile, Thomas Cook & Son still owned the run-down Hermitage Hotel at Eremo, but in 1949, they put it up for sale.

The contract to build the chair-lift was placed in 1951 with Von Roll of Berne, and cost only a third of what it would have cost to rebuild the funicular. It had twin-seat cars able to run every 30 seconds, giving a capacity of 240 passengers each hour, and took 5 minutes, at least in theory (it has been known for people to be suspended in mid-air for 1 hour). The opening date is unknown, but Wagons-Lits made a booking contract early in 1953. The electric railway was still working throughout 1952, but by 1953, the improved road was complete as far as the observatory at Eremo, and the excursion coaches from Naples (and regular bus from Pugliano) brought people to this point, where they changed to a shuttle train for the final 18-minute

2.1-km journey to the chair-lift. A rack locomotive would push two cars (usually numbers 6 and 7) up from the depot each morning and stand at Eremo all day until the convoy returned home at night. Nothing moved at all on the section of railway below the depot, and the track may well have been cut by the new road. This arrangement continued for 2 years while the road was built further up the volcano, but the railway finally closed in the autumn of 1955 when the road was finished. The track was still there in 1958, derelict and overgrown, but was later removed and the cars and locomotives broken up for scrap. The course of the line can still be followed on foot, except where bridges over roads have been removed. Pugliano Station has

been demolished, because in 1972–73, the Circumvesuviana Railway was changed into a subway and put partly underground through the area. Pugliano Station was replaced by Ercolano, a new station from where the bus for Vesuvius now departs, although most visitors travel by car or excursion coach from Naples. The Vesuvius Railway, one of Thomas Cook & Son's more unusual enterprises in tourism finally came to an end, but Vesuvius itself continues to attract visitors, and its ascent remains 'one of the most fascinating excursions in the world'. Although the volcano has been quiet for more than 50 years, it is still regarded as dangerous, and experts say that it is 'in the phase preceding a reawakening'. It seems that the story of Vesuvius and tourism has not yet ended. ■

Acknowledgement

I am particularly indebted to J. H. Price, editor of *Cook's Continental Timetable* from 1952 to 1985, on whose work much of the present article is based.



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