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November 20, 1949 : INAUGURATION OF THE REBUILT CHAIN BRIDGE

On November 20, 1949 - on the one hundredth anniversary of its initial opening - the historic Budapest Chain Bridge, destroyed by the fascists, will be inaugurated by the Hungarian nation. This festivity will be more than a simple bridge opening, more than the celebration of a hundred years' anniversary. This bridge was a rare technical creation in its time and has been considered one of the most magnificent bridges of the world ever since. The Chain Bridge became a symbol of political liberty in Hungary because the privileged nobility also had to pay toll on it. It was painful news for Hungary when the defeated Germans blew up the Chain Bridge, also, when they destroyed all the other big bridges over the Danube during the siege of the Hungarian capital in January 1945. The rebuilding of the Chain Bridge became a national issue and a special collection was even launched to secure the funds for its reconstruction. In the course of its reconstruction, which took about three years, a great number of innovations were employed which make this work noteworthy in technical history.

The Hungarian Reform Age Builds A Bridge The Hungary of one hundred years ago, when the bridge was built, was dependent, politically and economically, on Austria. Serfdom was still not abolished; there were no factories, banks, commercial undertakings, etc., in the actual sense of the word. The country was so backward as a result of the wars and foreign rule that had lasted for hundreds of years that paper money, for instance, was hardly used.

The liberal nobles, however, wanted a change, and despite the political and economic difficulties, they made great efforts to introduce modern institutions in the country. They planned railways, founded factories, organized steamship companies, drafted commercial laws, regulations for bills of exchange, etc. In the course of these activities an old dream of the Hungarian nation, the building of a permanent bridge in the heart of the country over the Danube, emerged again. The stream is about 300 metres wide between Buda and Pest and, under the circumstances of a hundred years ago, this seemed an almost unsurmountable obstacle. The bridge, however, was of major importance because it not only had to connect two cities - the two parts of the future capital - but it also had to prevent the western and eastern part of the country from being separated during the winter. As a matter of fact, the site of the Hungarian capital was already an important river crossing during the days of the Romans, and it was also a major marketing place. The construction of the bridge was, therefore, in the interest of millions of working people; only a small group of reactionary noblemen was against the scheme.

A Masterpiece of the Early Iron-industry

The reformers were not disheartened by the difficulties - and it was Stephen Széchenyi especially, who sponsored the plan. Upon his initiative, Sir Marc Isambard Brunel, Stephenson's friend and collaborator, prepared the first plans. The final draft was the work of William Tierney Clark.

With regard to its construction the Chain Bridge is what is known as a suspension bridge. Two mighty, arch-like pillars are built into the river close to the bank through which chains are led. The bridge proper is suspended on their chains. This type of bridge is still not obsolete. Even during the last decades several such bridges were erected. It is noteworthy that with respect to its middle span (202 metres = 663 ft) the Budapest Chain Bridge is still third in the world among bridges of its kind. Included in this type, among others, are the Brooklyn Bridge, the Suspension Bridge in Cologne (destroyed during the war), the Manhattan Bridge, the Hudson Bridge and the Suspension Bridge on the Menai Straits, built in 1826.

Bridge Building 100 Years Ago

This construction can be judged adequately only when we know the circumstances under which the work was performed. 2,140 tons of iron had to be built into a bridge in a country where there was hardly a foundry or engineering workshop. There were scarcely any skilled workers, although labourers, masons and stonecutters could be found. The entire work (800 men were permanently employed) was finished in a relatively short time - in ten years, from 1839 to 1849. Ten million man-hours were built into the bridge. Of course, it is very difficult to express the building costs in contemporary currency; they may have been the equivalent of three million 1938 dollars.

The wrought iron parts were brought from England, while the cast iron cross girders were made by the Ganz workshop in Buda.

The construction of the Budapest Chain Bridge is an outstanding creation of iron technology of the early 19th century. Only one such bridge, with similar dimensions, had been built previously: T. Telford's masterpiece, the Suspension Bridge over the Menai Straits. The Budapest Chain Bridge, however, with its 663 feet long middle span is longer than its English counterpart.

With its mighty arch-like pillars, dignified span and graceful construction, the Chain Bridge has never seemed outmoded or obsolete.

Hand in hand with the development of Budapest, traffic on the bridge increased and the old construction was unable to carry the load any longer. Between 1913 and 1915, in order to avoid any difficulties, the bridge was completely reconstructed. Its old shape remained unchanged; it only became stronger. 5195 tons of iron, 5000 cu.m. of wood, and 22,000 cu.m. of stonework were built into the bridge.

The Nazis Destroy the Chain Bridge In the fateful winter of 1945, when the victorious Soviet Armies already besieged the city, the Germans blew up the big Danube bridges of Budapest. One after the other, the several hundred metre long, mighty bridges over the Danube (each one a technical masterpiece) fell victim to Nazi vandalism. The mass destruction was completed with the dynamiting of the Chain Bridge on January 18, 1945. After the termination of hostilities, the country was again severed - as it was 100 years ago.

Reconstruction of the Chain Bridge With the energetic material and technical assistance of the Soviet Army, the vital task of bridge-building in the country began. So far, more than 2300 bridges have been reconstructed in the country. The Chain Bridge has really been "re-constructed". It has been rebuilt in such a way that, while its old splendour has remained untouched, everything possible has been modernized. A number of major innovations were employed in the constructional work itself.

The explosions and the artillery shells not only tore the massive chains into fragments but caused serious damage to the pillars as well. Until the pillars were repaired, work on the structure itself could not begin. The towering pillars, however, could not be touched because the main ornamental eaves on the top of the pillars, weighing several tons, threatened to crumble at any moment. This danger was removed by spraying cement mortar from a great distance into the holes. Only when the stonework was secured in this way could the pillars be approached.

The chain links, each one of more than 8 metres length, were partly at the bottom of the Danube, or hung broken or bent, over the waters. However, more than 2/3 of the material was salvaged and, after re-shaping, the links were used again.

The most important innovation was employed at the building of the bridge itself. In 1948, the foundation was repaired and the new steel parts prepared. In 1949, according to the programme, the entire construction had to be finished. With the old methods one year would not have been sufficient to erect the 5000 ton steel construction.

Chain bridges had always been built by first erecting a wooden staging in the river on which the chains were then mounted. Then came the cross-girders and, at last, the roadway of the bridge. This work could not have been done in one year.

With the new method the order was reversed. The cross-girders were first mounted in sections, then, temporarily supported by the cross-girders, the chain. When the chain was ready and could hold loads the cross-girders were connected to it. Afterwards came the roadway. The novelty was the building of the cross-girders in sections. These sections were supported by temporary stagings in the river, made of wooden piles, at distances of about 30 to 40 metres. In this way not only the entire work was done in a shorter time, but about 1000 to 1500 cu.m. of wood and several months' work were saved.

The new bridge, although completely unchanged in its exterior, is by far stronger. Two autobuses can pass abreast under the arches, and motor-vans are permitted to cross it. (Formerly vanswere not permitted to use the Chain Bridge.) At the bridgehead, circular driveways have been built in accordance with modern practice.

In 1849, the new Chain Bridge was the symbol of social and technical progress; in 1949, the rebuilding of the Chain Bridge is an important step in the reconstruction work of the Hungarian People's Republic. The bridge, standing again in its old splendour, testifies that - as Matyas Rakosi said in his speech introducing the bill on the Constitution of the Hungarian People's Republic - "...the People's Democracy carefully preserves and fosters every living and fertile tradition of a thousand years of Hungarian history... takes good care that good traditions should not only survive but they should be imbued with new life and a new content in our People's Democracy."

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