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## 7. "The Revolution", Blackpool (England)

*Owner: Blackpool Pleasure Beach Company*

*Architect (Consulting): Day & England*

*Engineer: Jan Bobrowski and Partners*

*Contractor: Blackpool Pleasure Beach Company*

*Steelwork Sub-Contractor: Robert Watson & Co  
(Constructional Engineers) Ltd.*

*Supply of Central Arch & Mechanical & Electrical  
Equipment: Arrow Development Company, USA*

*Works duration: 10 months*

*Service date: November 1979*

The supporting structure of the 194 m long winding track for "The Revolution" ride (or "The Loop" as it is called in the USA) at Blackpool Amusement Park consists of three steel latticed arches. Two circular ones at the ends form the "loading structure" and the "return structure" respectively, each of which has an overall length of 56.8 m. The span of these arches is 32 m with a cantilever overhang of 23.8 m. The width is generally 3.25 m. The central arch which has been designed as three-pinned, is parabolic and has a span of 25 m with a rise of approximately 16 m.

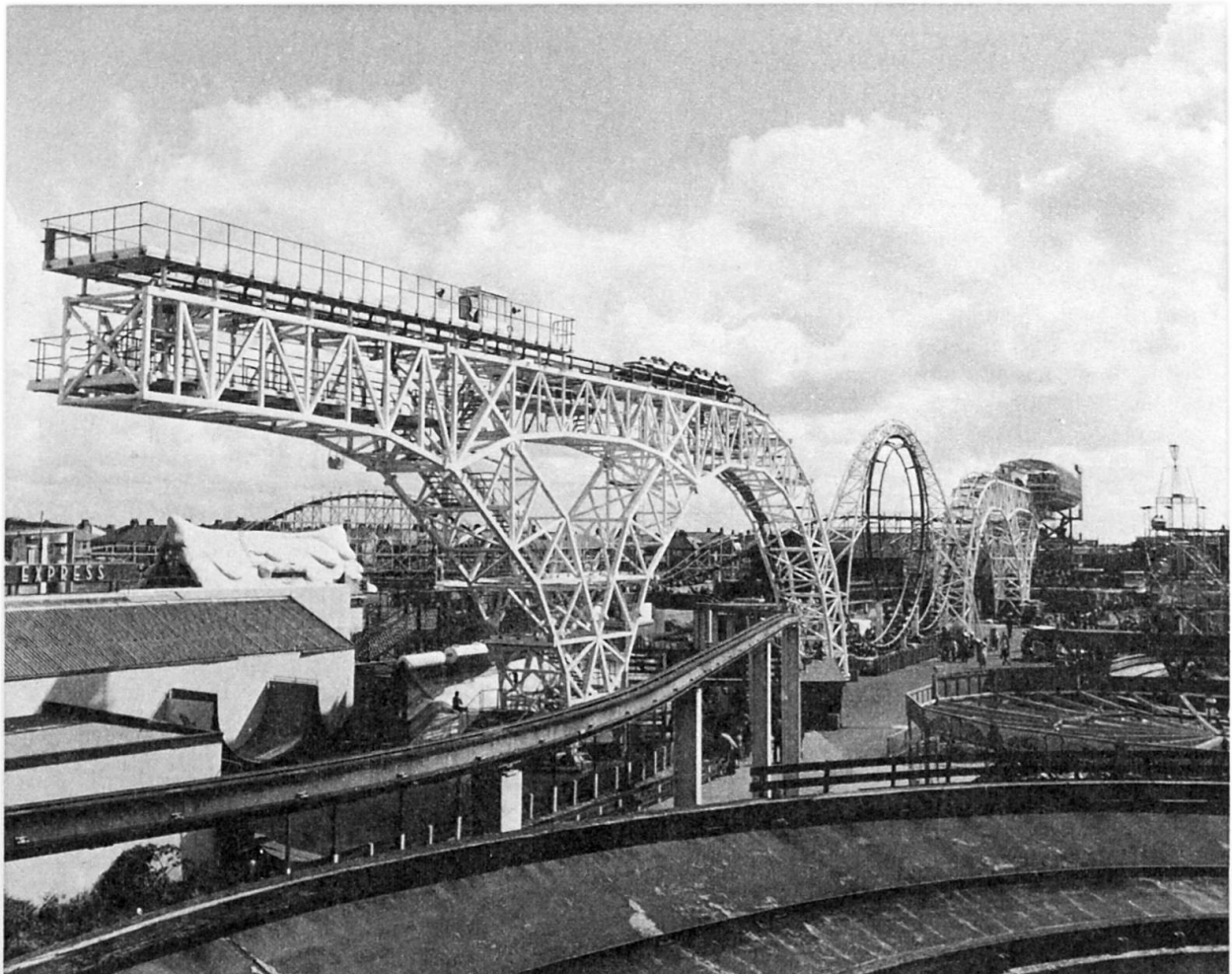


Fig. 1 Overall perspective

The  $16.8 \times 6.6$  m station building is supported at the cantilever end of the "loading structure" whereas the "return structure" accommodated 29.7 m long platform at the far side.

The central arch is of welded tubular steelwork while the other arches consist of square rolled hollow section.  $200 \times 200 \times 10$  sections form the top and bottom boom throughout while the verticals and diagonals are generally  $100 \times 100$  or  $120 \times 120$ . The straight length has been maintained between nodal points to eliminate as far as possible the secondary stresses due to curvature. The loading structure was prefabricated in seven large sections weighing up to 27 t. The return structure was fabricated in eight component

parts. The site joints were achieved by bolted connections away from the nodal points. Sequence of erection and site connection design of different components virtually eliminated the use of any scaffolding for erection.

Weather protection treatment to structural steelwork consisted of shot blasting to British Standard followed by zinc metal spray (150 micron) and one coat of Protectomat seal and one coat of primer. One coat of finishing paint was applied on site.

The arches were founded on piles. Altogether 118 bored piles each of nominal 500 mm diameter were installed.

*(B. K. Bardhan-Roy)*



Fig. 2 Central loop and arch