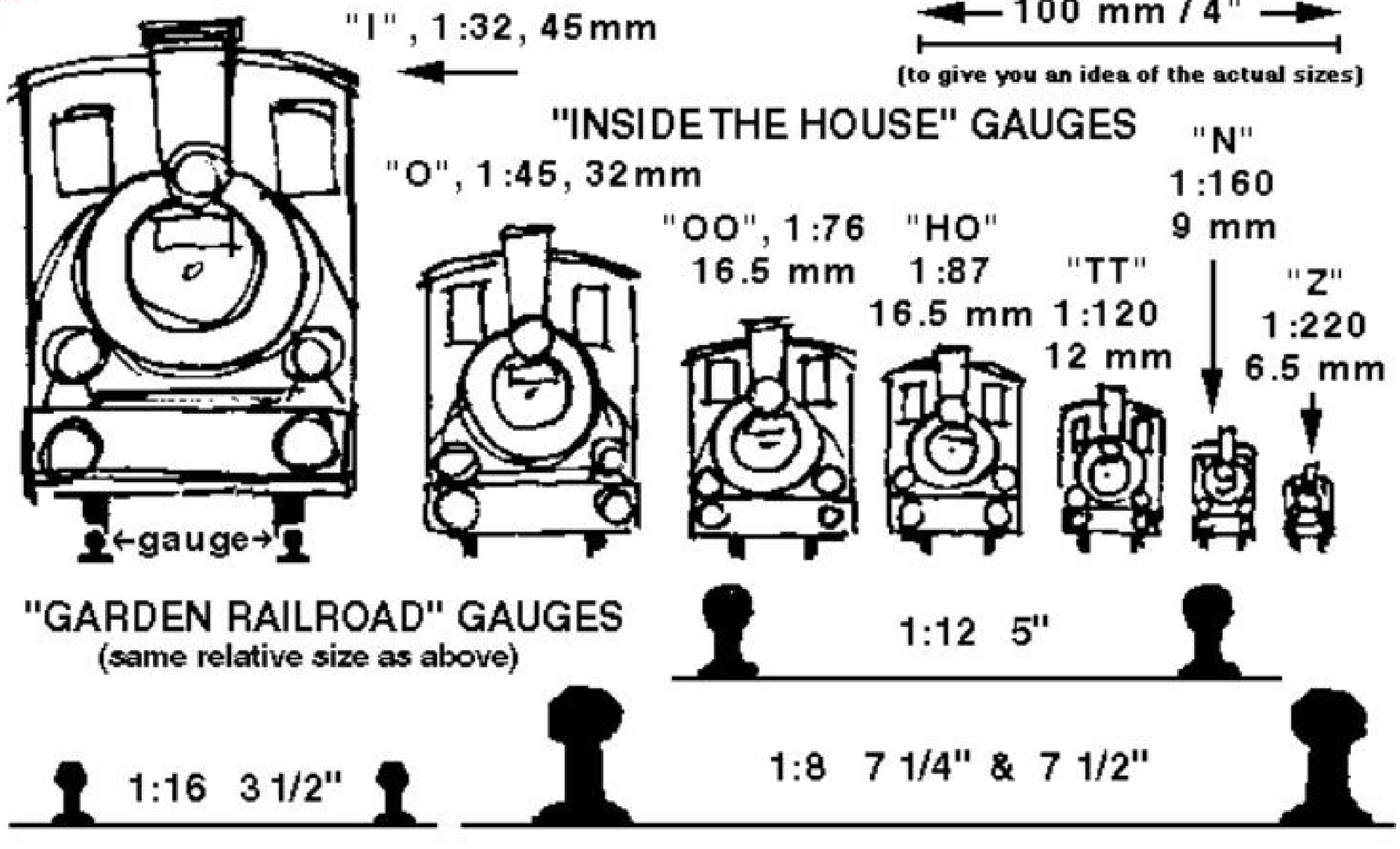
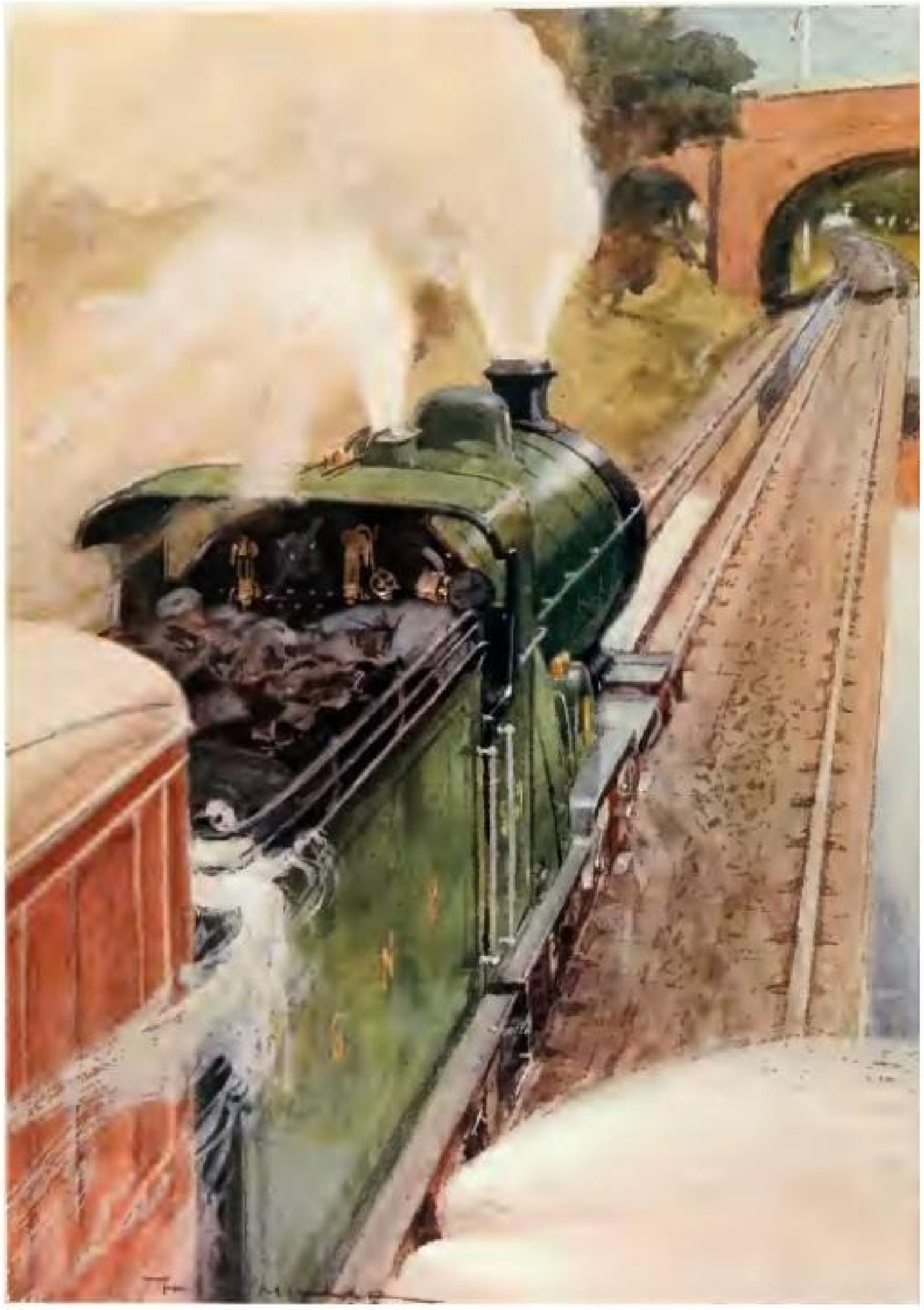
PORT ELIZABETH MODEL RAILROAD CLUB

Newsletter January 2021

#02/2021

Every gauge welcome!





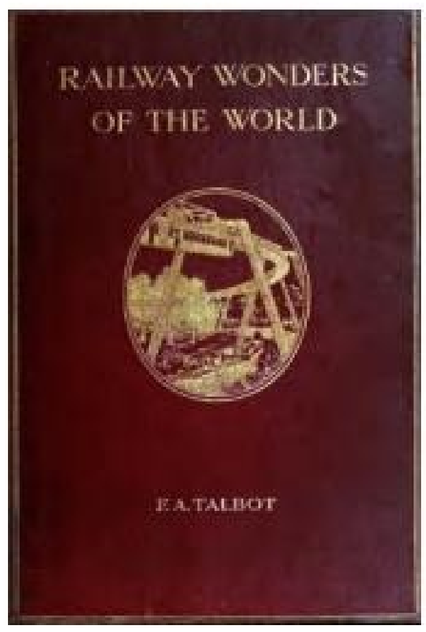
***Moser channel bridge**, about 10km long (7 miles) Moser Channel is the deepest passage spanned by the Seven Mile Bridge and is one of four predominant passages in the Florida Keys – converted to a road bridge in 1938.*

"Taking up Water"

Both from:

"Railway Wonders of the World'

by F A Talbot



In this issue:

HISTORIC RAIL in PORT ELIZABETH

The jetty and outer anchorage Port Elizabeth ca 1906 – it is here that passengers and cargo from the outer anchorage are landed by means of tugs and lighters.

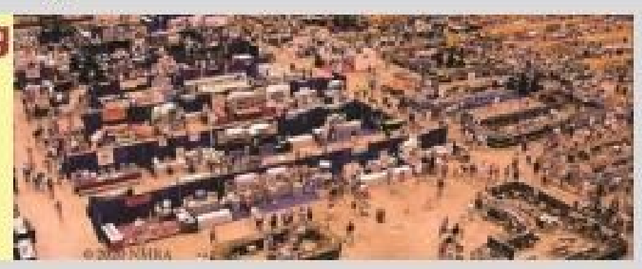
No 54 class NGG11 on the docks hauler in 1973 passing #3688 class 24 climbing the 1-in-40 away from the Baakens River up to Humewood Road. The steel spans and concrete piers of the viaduct replaced the original wooden trestle in the late 1950s.

Photo by J Carter Soul of A Railway © > System 3 >

PEMRC CALENDAR

Although larger gatherings are now permitted, the overriding factor still is the limit of 50% of capacity of the venue. Depending on the venue of the host, the capacity limit including the host, is usually less than 10 persons.

Booking is therefore essential.
Please book with the host the day before via WhatsApp or SMS
No organised activities are currently arranged.

Date		Meeting type	Venue	Time	Host
Sat 23	January 2021	PEMRC Annual General Meeting Virtual meeting via Zoom, adjourned due to lack of quorum and postponed by one week		10:00	
Sat 30	**January 2021**	**PEMRC Annual General Meeting Virtual meeting via Zoom**		**10:00**	
9-11	**July 2021**	**National Train Show Santa Clara California, USA**	**NationalTrainShow.org July 9 - 11, 2021 Santa Clara, CA Santa Clara Convention Center** 		
29-30	**Oct 2021**	**Eurospoor 2021 Event & Exhibition Centre Jaarbeurs Utrecht, Netherlands**	EUROSPOOR		
14-21	**Aug 2022**	**NMRA National Convention 2022 Birmingham, UK https://www.nmra2022uk.org/**	NMRA 2022 BIRMINGHAM UK		

PEMRC Annual General Meeting 2021

The meeting which was to be held via Zoom due to the Lockdown on Saturday 23 January 2020 had to be postponed when after 15 minutes there still was not a quorum. The AGM of the Port Elizabeth Model Railroad Club was then held on Saturday 30 January 2021 at 10:00 **attended by** these 8 members who now formed the quorum:

Albert Brown, Mike Parsons, Mike Smith, Mike Smout, Attie Terblanche, Frank Lobe, Graham Chapman and Roel van Oudheusden.

Apologies received from 4 members: Carey Muller, Charl du Plessis, Tertius Coetzee and Hylary Smith.

Previous minutes were accepted as correct.

Agenda:

1. Opening and welcome.
2. Apologies.
3. Minutes of the previous AGM of 18 January 2020.
4 Chairman's Report.
5. Treasurer's Report.
6. Shop Report.
7. Layout visits.
8. Club House.
0. Subscriptions for 2021.
1. Election of the Club Committee for 2021.
2. General.
3. Closure.

Chairman's and Treasurer's reports are appended to the e-mail.

Shop report.

The lack of a meeting place and further severe restrictions to members socialising during our Covid 19 lockdown type of existence in 2020, did not bode well for the hobby, nor for the club shop sales. The potential sales value of shop stock held by December 2020 is approximately R16421.

Not much different to the values at the end of last year, 2019. Once again, the used goods values may not be a realistic reflection, nor fit in with current demand, and should only be seen as an approximation of true value. The new items in stock are marked at the original purchase and market values, which may have changed up or down since.

No layout report was expected since there were only a few due to the lockdown.

Club House - Mike Smout undertook to phone J-P Kruger and report back on the status of the building plan submission to Council.

Subscriptions for 2021.

It was agreed by all to maintain subscription rates as the current levels (status quo).

Election of Club Committee for 2020.

Current committee with the exception of Mike Smith are all available for re-election.

It was agreed to reduce the size of the committee to five from the current eight since not all positions are currently active due to the pandemic.

Mike Smout, Carel van Loggerenberg and Mike Smith step down.

Roel was coerced to continue as Chairman for another year.

Mike Smith would mentor Graham Chapman to run the shop.

Attie continues as Treasurer and Club Secretary.

J-P Kruger remains the Club House project leader

Mike van Zyl to remain on committee and could possibly take over the shop and/or chair.

Thank you to all for your contribution, support and involvement with the club, Roel.

General

Lack of progress with the Club House or knowing the current status is on everyone's mind. Regular feedback and communication to members is needed.

Currently the Club Newsletter is what holds the Club together – vote of thanks by Mike Parsons seconded by all.

The meeting closed at 10:34

COMMITTEE 2021:

Chairman:	Roel van Oudheusden roelvanoza@gmail.com
Treasurer:	Attie Terblanche terblalc@telkomsa.net
Clubhouse:	JP Kruger juanpierrekruger@gmail.com
Editor:	Roel van Oudheusden pemrailroadclub@gmail.com
'Shop':	Graham Chapman chapman22@telkomsa.net
Workshops:	Mike van Zyl carpencab@gmail.com

Subscriptions for 2021 remain at **R300** for the year.

EFT is preferred, but the Treasurer may be persuaded to accept cash.

Bank account: Port Elizabeth Model Railroad Club

FNB Walmer Park, branch code 211417, Account no. 623 861 2205

Write to:

pemrailroadclub@gmail.com

Illustrated articles are preferred.

BASCULE, LIFTING and other types of MOVING BRIDGES

This imposing industrial building from **1927** is one of the most important monuments in Rotterdam and is a symbol of the port city. **De Hef (Koningshavenbrug)** has graced **Rotterdam** for nearly 100 years.

Built as a **lift bridge** to cope with the explosive population growth of the city and to facilitate train traffic to the Northern Netherlands. De Hef lost its function when a railway tunnel opened in 1994. Nevertheless, plans for the demolition could count on strong protest from the Rotterdammers. De Hef had to stay. The bridge was therefore **designated as a national monument in 2000**. The former railway bridge consists of two lifting towers almost 70 meters high, with a 52 meter long moving bridge road surface in between.

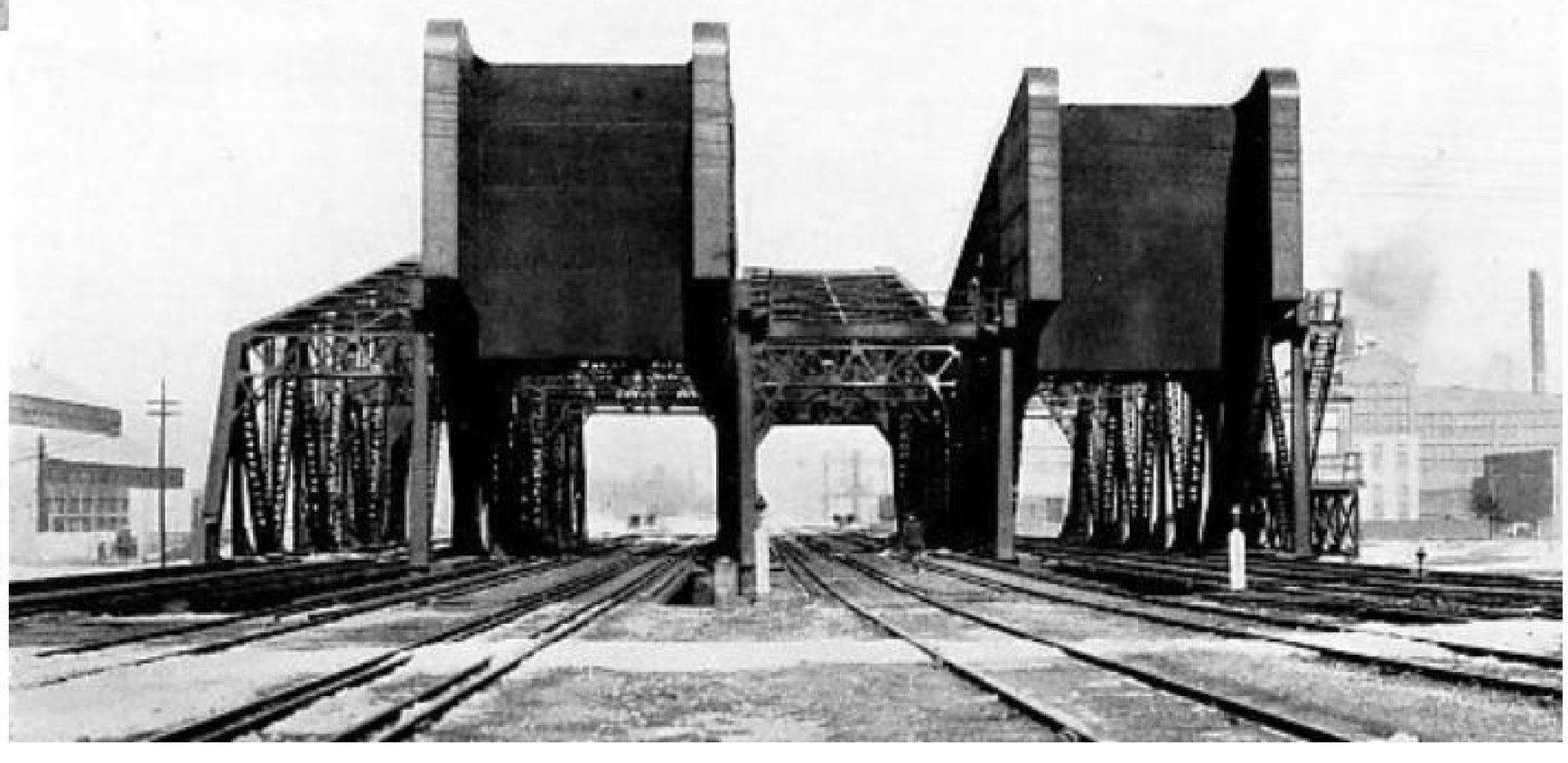
The **Koninginnebrug** is a bridge over the Koningshaven in Rotterdam, next to the Hef. The bridge connects the Noordereiland with the Feijenoord district. It is a **double bascule bridge** built in 1927 to a design by A.H. van Rood. The Queen's Bridge has two movable riveted steel flaps. The counterweights of 800 tons each are located in the bridge cellars. The bridge has four bridge keeper's houses with copper roofs. However, the bridge is now remotely controlled from the control house of the Erasmus Bridge. Since the North-South line of the Rotterdam metro was completed in 1968, trams no longer run across the Koninginnebrug.

160ft single leaf double track Scherzer Rolling Lift Bridge across Cuyahoga River at Cleveland, Ohio in closed and open position resp.

The **rolling lift bridge** is a form of **Bascule Bridge**, the characteristics of which are simplicity of working and inexpensiveness of construction.

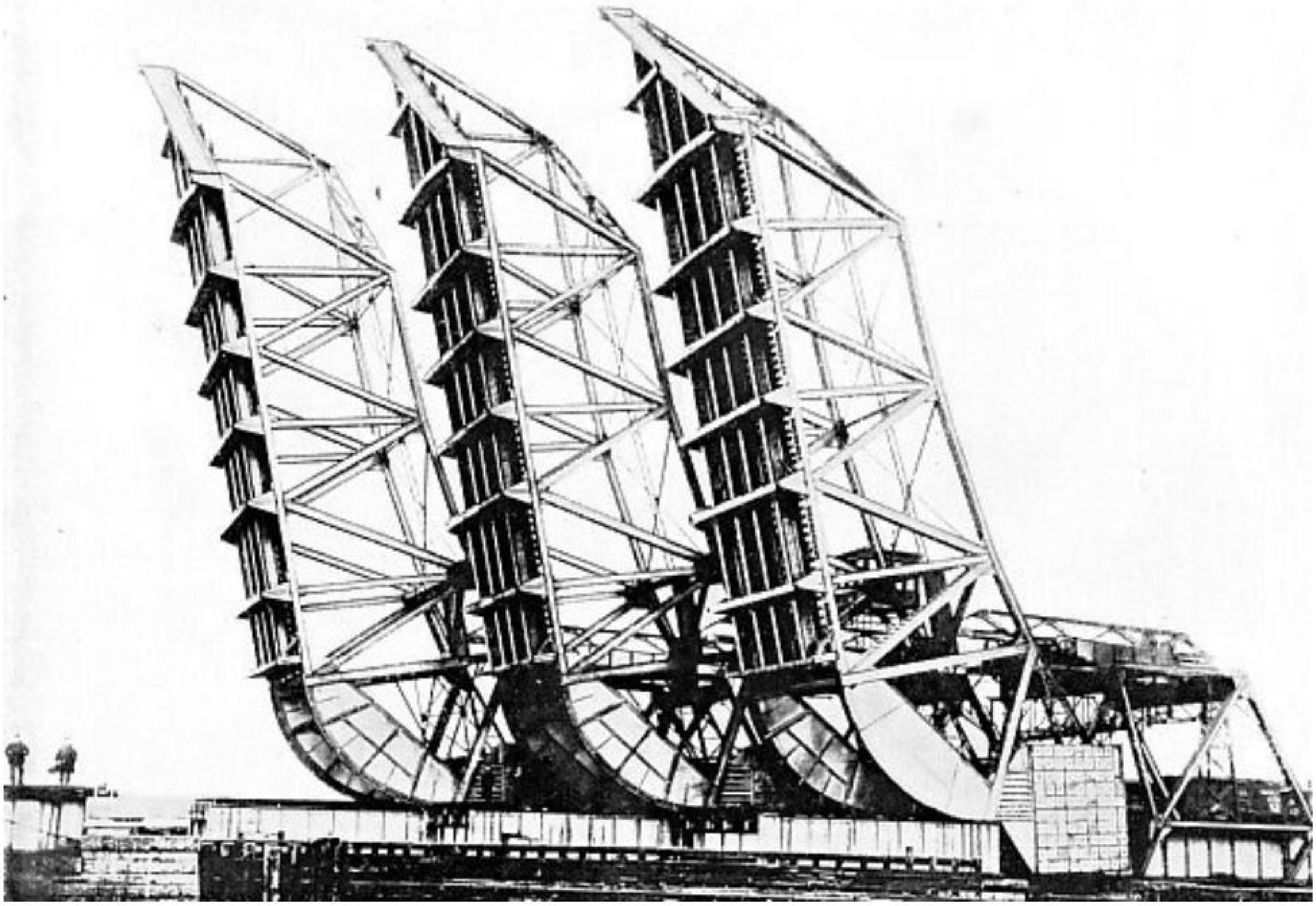
The bridge is, in reality, in two sections. Two duplicate structures, each carrying two sets of metals, are built side by side, and firmly coupled together so as to be operated as one bridge. Inasmuch as it might be desired to use each section separately, the designer introduced facilities whereby, within ten minutes, the coupling can be severed, and each bridge operated independently of the other, so that, the railway has a crossing at all times. The movable span is 114 feet, centre to centre of bearings, and the channel between the masonry piers is 108 feet. This structure is designed to act upon either the **arch or cantilever principle**. When acting as a cantilever the live load is supported by the tail girders, which are locked under the projecting approach spans, the latter being firmly anchored into the masonry. The counter-weighting is so carried out that upon opening the tail and centre locks, the leaf rises to an angle of about 30 degrees, so that only the minimum of energy is required to open it still wider or to close it. As a rule, the bridge can be opened or closed within thirty seconds, and is ready to permit trains to pass within a minute of its commencing to close.

Single leaf Scherzer rolling bridges mounted side by side operated from opposite banks, forming an 8-track structure across the ship canal in Chicago.



It may be pointed out that the Scherzer is by no means the only expression of the bascule bridge of today, but it was **the first** to be operated upon the **rolling lift principle**. The idea is very simple. If one takes a wheel and divides it into four equal parts, and then sets up one of these segments vertically upon a horizontal runway, forming a track as it were, and upon the upper side lays a plank horizontally, so as to overhang in the form of a leaf, one has the Scherzer bridge in its most primitive form. Now if one presses down the tail end of the leaf the segment will run backwards in the manner of a quadrant, causing the leaf to swing up through the air until it is vertical, the tail end then resting upon the ground or dipping into a pit. Such is the basic principle of the **Scherzer Bridge** and its operation, and it is the simplest form of bascule which has been designed yet. In fact, extreme simplicity was the point for which the inventor strove, and in this quest he succeeded completely. Of course, in perfecting the idea from the foregoing nucleus, other mechanical details were taken into consideration, so that the essential movements might be made with the minimum of friction.

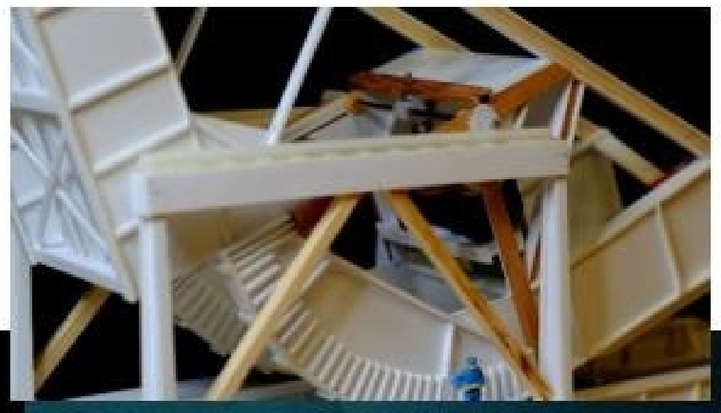
Some remarkable bridges have been carried out upon this principle, especially in the land of its origin. The **New York, Newhaven, and Hartford Railroad** was presented with a puzzling proposition when it essayed to improve the facilities for entering and leaving the huge South Terminal station at Boston, Mass. The banks on either side of Fort Point Channel are low-lying, the waterway is busy, the tracks had to be compressed into six, and the engineers were pushed for room owing to the close proximity of swing bridges. Moreover, in order to cross the waterway it was necessary to run at a very acute angle. The situation was discussed very carefully owing to the strict character of the limitations, but at last it was decided to install a six-track **Scherzer rolling lift bridge** in three sections, duplicates of one another, two roads to each, and to be coupled so as to be operated simultaneously or independently. This was the first six-track bridge to be built upon this principle, but in operation it has proved completely successful. A 50 horsepower electric motor is sufficient to operate each double-track span of 144 feet, while the whole bridge is controlled and worked by one man.

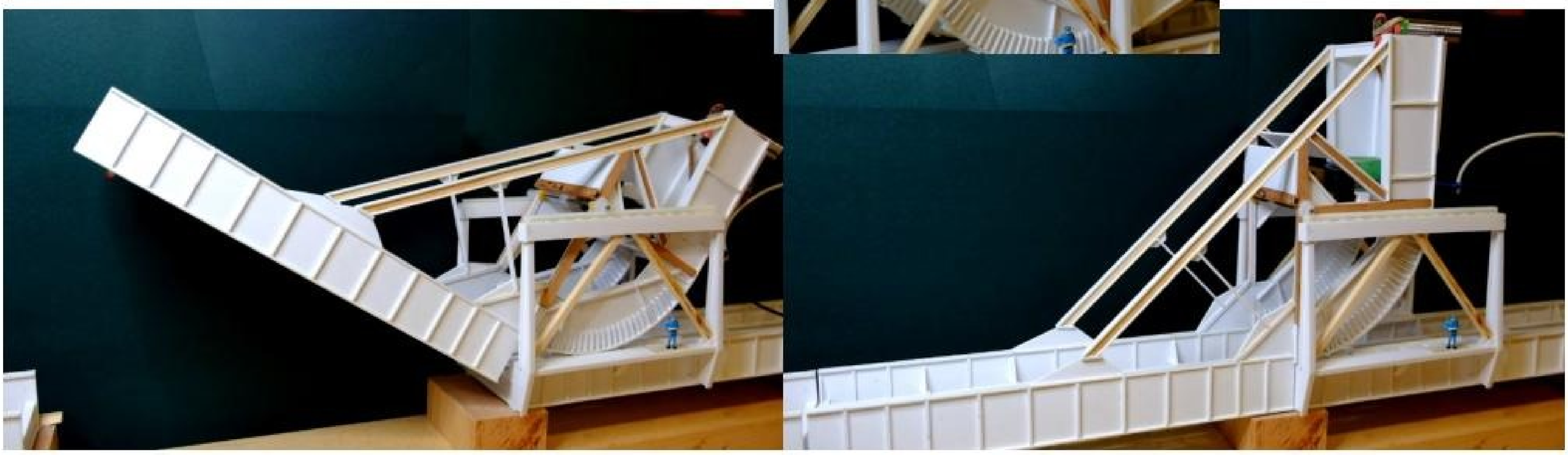


https://wondersofworldengineering.com/lift_bridge.html

You can view videos of the operation of **HO model bascule bridges** here:

https://youtu.be/Zue6eoTtKIY





and this masterpiece **handcrafted in 1932 by the New Haven Society of Model engineers:**

https://youtu.be/PCSwJDD-zz4

The **largest vertical lift bridge** in the world today is the **Arthur Kill Vertical Lift Railroad Bridge** connecting Elizabeth port, New Jersey and the Howland Hook Marine Terminal on Staten Island, New York, USA.

The bridge was built by the **Baltimore and Ohio Railroad in 1959** to replace the swing bridge opened in 1890 It contains a single track that is used mainly to carry garbage out of New York City, as well as to transport freight to destinations in western Staten Island. The bridge parallels the Goethals Bridge, which carries Interstate 278.

It has the **longest lift span** of any vertical-lift bridge in the world, with two **215-foot (66 m) towers** and a **558-foot (170 m) truss span** that allows a 500-foot (152 m) channel. It clears mean high water by 31 feet (9.45 m) when closed and **135 feet (41 m)** when lifted.

After the bridge opened in 1959 upon having replaced the Arthur Kill Bridge, rail traffic declined due to loss of manufacturing facilities on Staten Island. Bethlehem Steel closed in 1960, U.S. Gypsum in 1972, U.S. Lines-Howland Hook Marine Terminal in 1986, and Procter and Gamble in 1991. A shift to truck traffic also reduced rail traffic over the bridge, and the North Shore branch of rail service went through a series of owners. The three companies that owned the North Branch were B&O Railroad, CSX, and the Delaware Otsego Corporation. They saw the bridge as excess property. The last freight train went over the Arthur Kill Lift Bridge in 1990, and North Shore branch service ceased to operate until 2007.

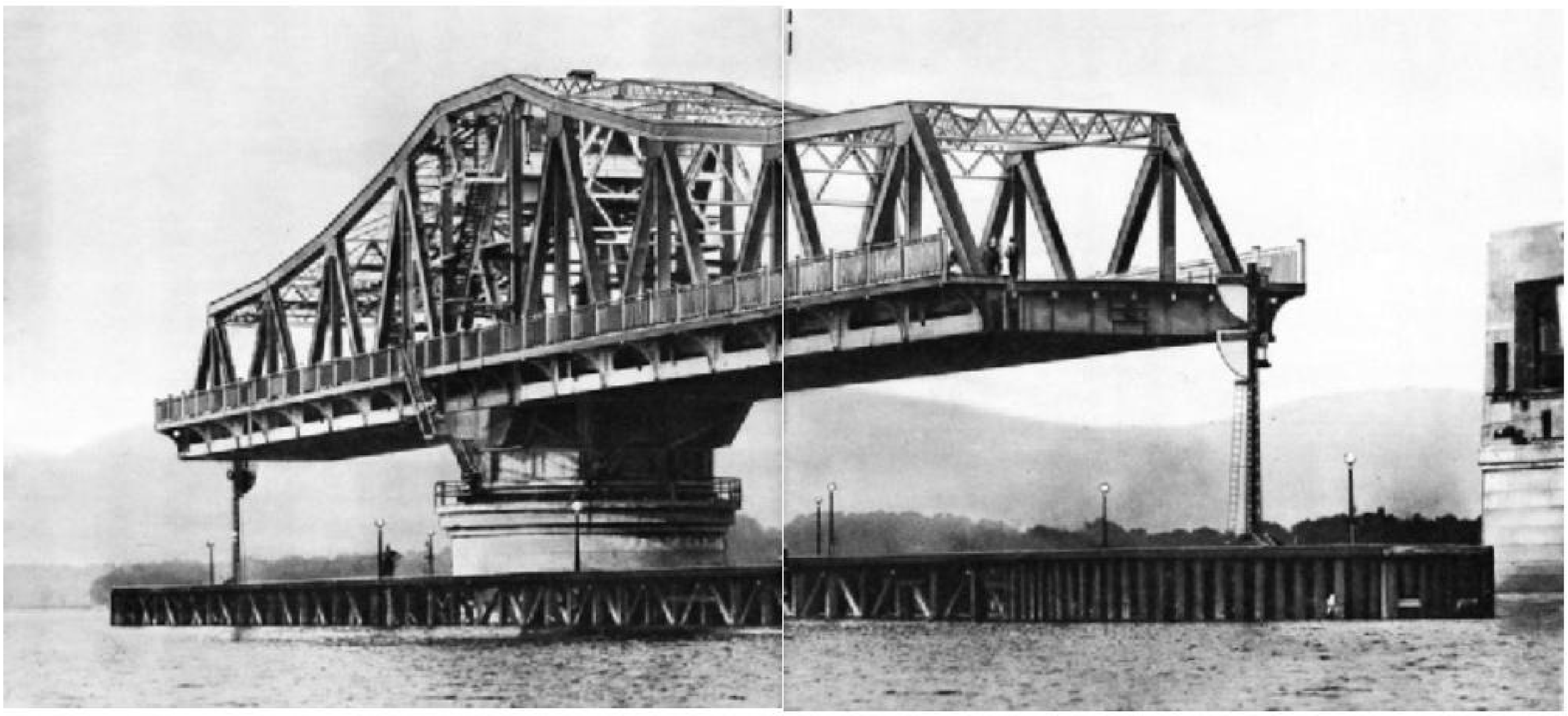
A **swing bridge** is a movable bridge that has as its primary structural support a vertical locating pin and support ring, usually at or near to its centre of gravity, about which the turning span can then pivot horizontally. Small swing bridges as found over canals may be pivoted only at one end, opening as would a gate, but require substantial underground structure to support the pivot.

The **George P. Coleman Memorial Bridge** is a **double swing bridge** that spans the York River between Yorktown and Gloucester Point, in Virginia, USA. It connects the Peninsula and Middle Peninsula regions of Tidewater, Virginia. Originally **built in 1952**, it was reconstructed and widened in 1995.The current **3,750-foot (1,140 m)-long double-swing-span bridge** carries a four-lane arterial highway. The movable span is needed to allow ship access to several military installations that are upstream of the bridge, most notably,

the United States Navy's Naval Weapons Station Yorktown. The roadways are almost **90 feet (27 m) above the river** at the highest point of the bridge. The bridge is the **largest double-swing-span bridge in the United States, and second largest in the world**.

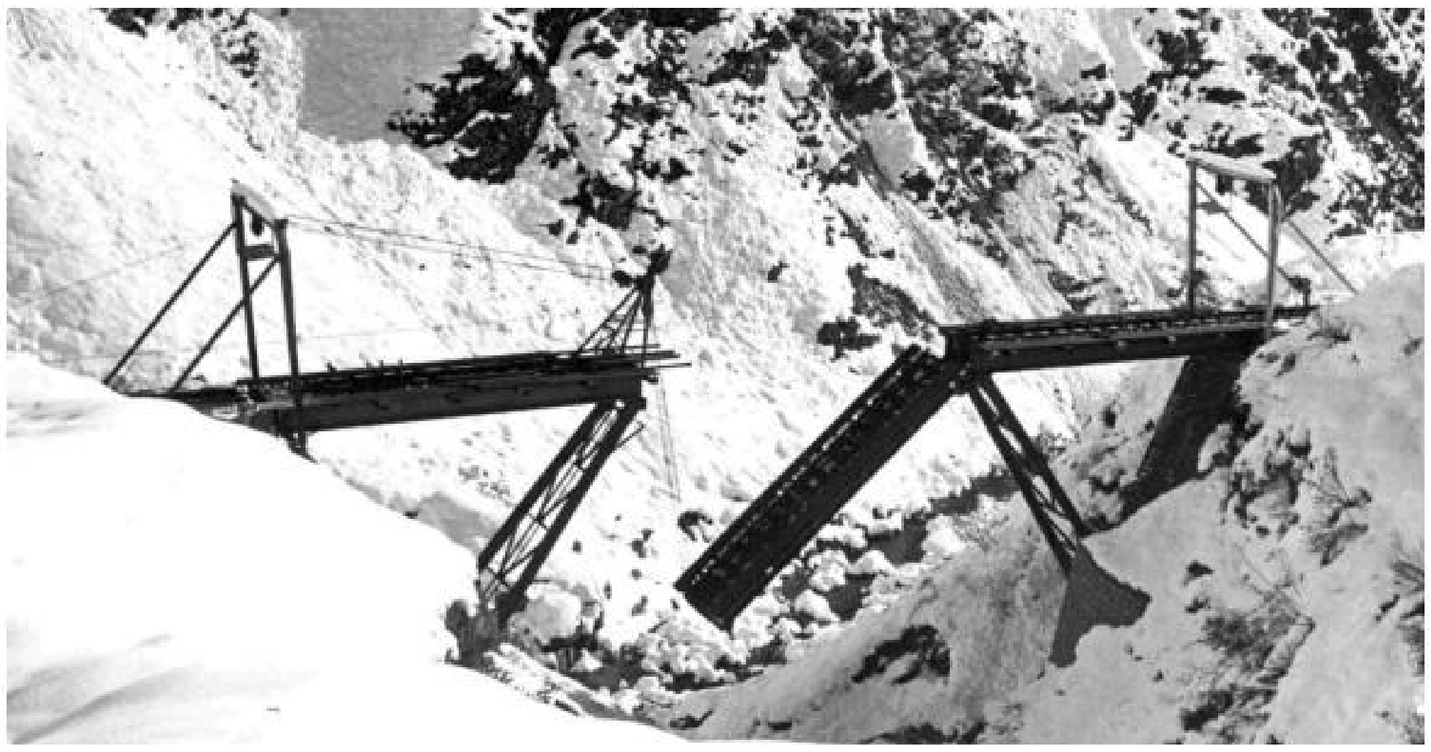
The toll bridge was named for George P. Coleman, who from 1913 to 1922 was the head of the Virginia Department of Highways and Transportation, predecessor to the Virginia Department of Transportation (VDOT). The bridge has been one of the sites of a special program to establish and encourage nesting locations for the peregrine falcon population of Virginia.

Across **the Firth of Forth at Kincardine** is a magnificent road bridge whose central span, **364 feet long**, is pivoted on a central pier. This span is opened by electric controls to allow the passage of shipping. In addition to having the **longest swing span in Europe**, this new bridge has the distinction of being the **longest road bridge in Great Britain**, with a total length of **2,696 feet.** A remarkable feature of the bridge is the electric control of the opening and closing of the swing span.



BNSF Railway bridge opened in 1908 across the Columbia River connecting Portland, Oregon, with Vancouver showing the swing-span section turning.

The Steffenbachbrücke is a railway bridge on the **Furka Mountain Railroad**. The steel bridge built in **1925** has a span of around 36 meters and a maximum height of around 17 meters. It is remarkable **because it has to be dismantled every autumn and reassembled in spring to protect it from avalanches.** The bridge is located in the north-eastern, Uri part of the route between **Realp and Tiefenbach** at 1765 m.



The stone viaduct, built between 1912 and 1914 at this point, was destroyed by an **avalanche** in May 1916.The First World War delayed the reconstruction of the bridge and the further construction of the line. It was not until 1925 that the bridge construction company Theodor Bell & Cie. Completed the new bridge, which could be kept out of the way of the avalanches following the Steffenbachtobel creek by a **folding construction**. The interruption of the rails was not a problem because the route was not winter-proof anyway.

The idea of this bridge construction came from the chief engineer of the Rhaetian Railway, **Erminio Bernasconi**.

The bridge girder consists of three parts and, like the adjoining sections of the route, is arranged with a gradient of 10‰. The two connecting points are supported by inclined pendulum supports on the foundations of the brick-built bridgeheads that are inclined outwards. The construction weighs 32 t, plus 15 t for the track superstructure with rack.

For dismantling, the approx. 13-meter-long middle section of the girder is lowered so that one end hangs on the bridge girder on the valley side. The two outer girders, each approx. 11.5 meters long, are then lifted at the abutment and pulled outwards over the adjacent track sections until the pendulum supports attached to them rest against the bridge heads. This is done from above (Tiefenbach side), with the ends of the support parts each hanging on a pulley block and being lifted or moved by coordinated operation of the winches. In this "winter position", the central part of the bridge that hangs down rests on the support on the valley side and is protected from avalanches in this position by a wall protrusion.
The reconstruction takes place in reverse order. It is not uncommon for part of the snow under the bridge to be removed beforehand, so that the hanging centre piece in particular can swing freely. No crane is required for assembly and dismantling. Two winches are sufficient, the two assembly stands, which are permanently installed (also during the pulling operation) above the abutments, a movable auxiliary stand and some pulleys and pulleys, which are stored in a small shelter near the bridge. The winches were originally operated by hand. Today, electric motors make work easier, so that assembly and dismantling can be done in one day.

View the time-lapse video of the reassembly in the spring of 2011 here:

Or the HO model here: https://youtu.be/iaA8ZFNfl3o

More Swiss model rail https://youtu.be/Kwax_kc0VEY

Click on this image to view this well done model of the Dampfbahn Furka-Bergstrecke in 1:87 (H0m)

dampfbahn**furka**
bergstrecke

Das Dampfbahn-Abenteuer an der Furka
L'extraordinaire train à vapeur au
cœur des Alpes suisses

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Die Erlebniswelt der Dampfbahn Furka-Bergstrecke
Les attractions du Train à vapeur de la Furka

The Furka Mountain Steam Railway – a unique experience
Il fascino del treno a vapore nel tratto montano della Furka

Teilstück der historischen Strecke des Glacier-Express (West/Ost-Alpenquerung)

The rebirth of the steam rotary snow plough R12 of the DFB, ex RhB in December 2020, the first test run after the reconstruction of the 107 year old machine on the **Furka Mountain Railway.**

https://youtu.be/4PXcM8ZL7Ks

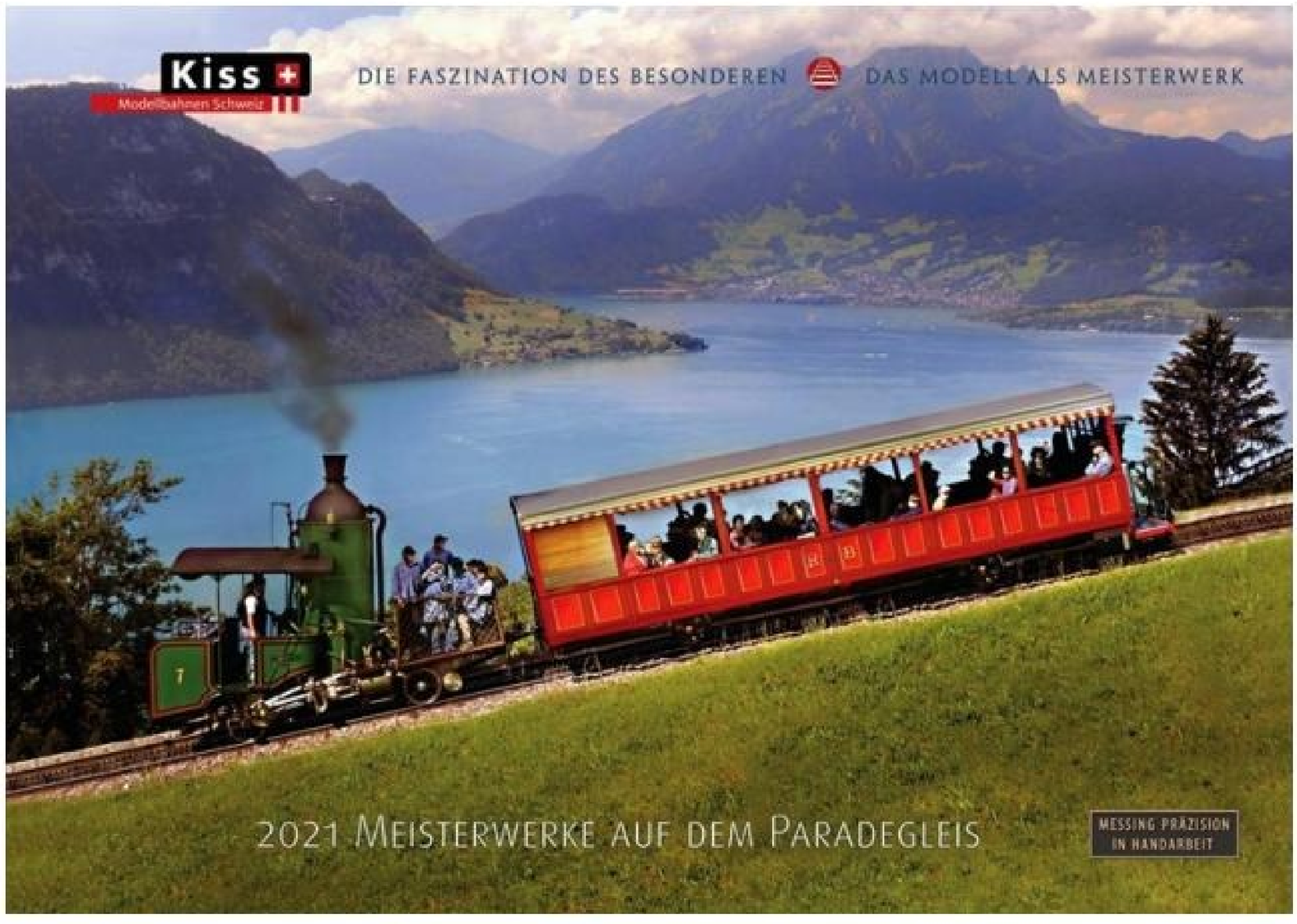
[Kiss Modellbahnen Schweiz](#) has opted for an optimal and appropriate logistics for the transport of the precious models from the Far East, which could not fit better into the world of model railways: the China train brings the precious freight to Europe!

Anyone who uses the train to transport goods from China to Switzerland doesn't have to be a nostalgic train fan with a lot of time, because the container train moves several times a week on the 11,000km long track. Depending on the route, the transport from terminal to terminal takes 2-3 weeks. Either the goods train rattles on the northern route through the endless vastness of Siberia and Mongolia or on the southern route through Kazakhstan, Belarus and Russia.

The freight and capital costs for rail transport are only around a third compared to air freight. The railways are not only economically viable, they are also the most environmentally friendly transport solution.
A model will soon be steaming onto the "Queen of the Mountains"

The Rigi Bahn, the oldest mountain railway in Europe, will be 150 years old next year. Only the Mount Washington Cog Railway in the USA is two years older, and that shows the extraordinary importance of this rack railway, especially from a technical point of view. The Gotthard Railway was only opened 11 years after the Rigi Railway. In anticipation of the anniversary, so to speak, the legendary H 1/2 No. 7 cogwheel locomotive from 1873 was transferred from the Swiss Museum of Transport by ship over the lake to Vitznau.

This unique exhibit belongs to the national mobility collection and is on loan to the Rigi Bahn for three years. It is now being subjected to an extensive restoration in the Rigi Bahn workshops and will then blow on the «Queen of the Mountains» again. That was reason enough for Kiss Modellbahnen Schweiz to replicate this precious museum piece that made railway history as a memorial in the model railway world.
Kiss manufactures Swiss rolling stock in Gauge G, (garden) Scale 1:22.5



Click on this image to view the video on YouTube.

Show & Tell

This is the place to share your latest layout or project with fellow modellers. Every issue we publish a selection of your best photographs and stories, as well as interesting oddities and the occasional modelling disaster.

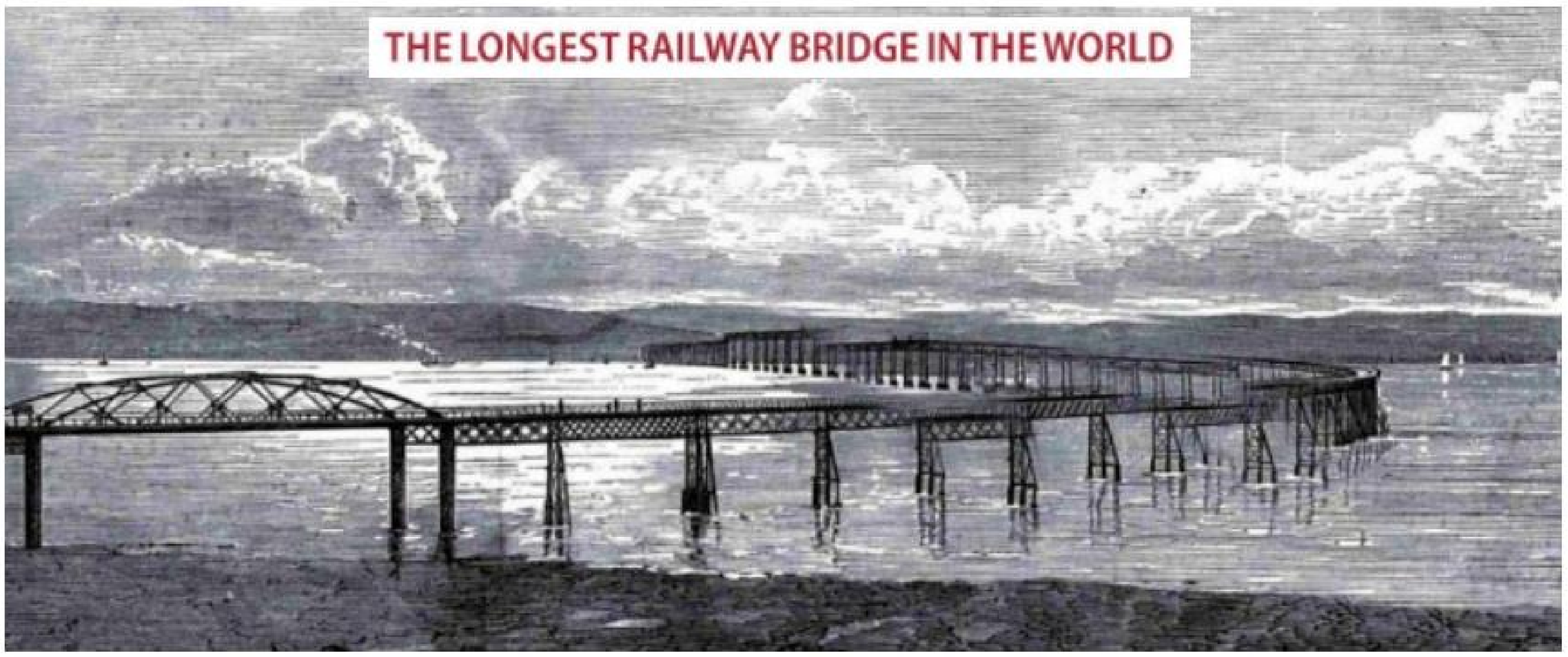
MARKET PLACE

Members can advertise their model rail related items here for free;
All others pay a 10% donation of the value to PEMRC.

Please submit your offer to pemrailroadclub@gmail.com ASAP for this **HO SAR suburban train set by LIMA #10 4512** as illustrated, consisting of one motor unit and 3 coaches, transformer, one length of flexible track, two short straights plus all the track mounted on board including two manual points.
It has not been used in years and has not been tested. Who wants it?
All offers will be considered.

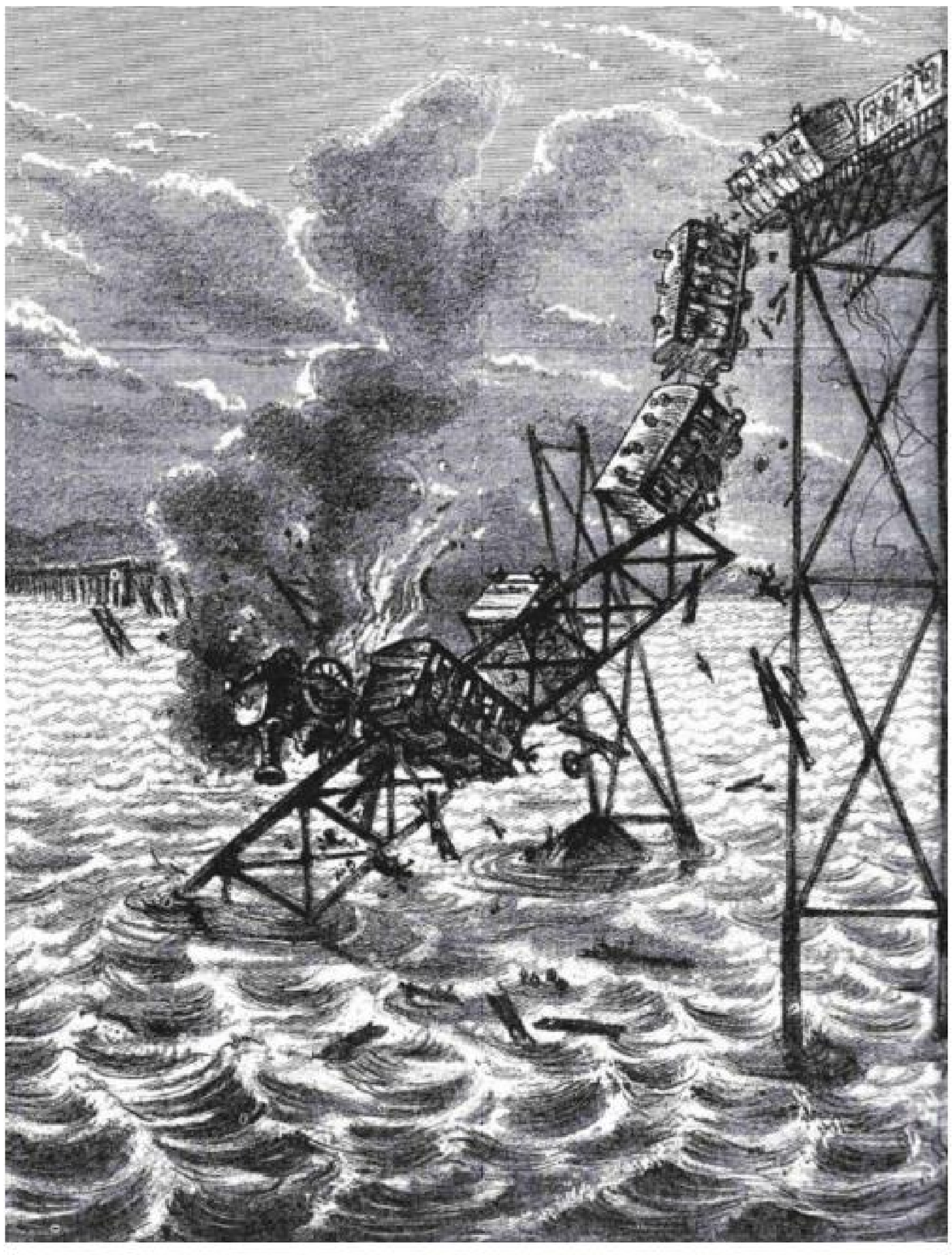
The railway *Titanic*

When it was opened, Scotland's Tay Bridge was hailed throughout the world as an engineering marvel. Yet within months, it had become immortalised as a byword for railway disasters, after part of it collapsed taking a train and 75 people on board to the bottom of the river below.



Bouch's Tay Bridge before the disaster.

The **Tay Bridge** (Scottish Gaelic: Drochaid-rèile na Tatha) carries the railway across the **Firth of Tay in Scotland** between Dundee and the suburb of Wormit in Fife. Its span is **2.75 miles (4.43 km).** Plans for a bridge over the Tay to replace the train ferry service emerged in 1854, but the first Tay Bridge did not open until **1878**. It was a lightweight lattice design of relatively low cost with a single track. **On 28 December 1879, the bridge suddenly collapsed in high winds**. The incident is one of the greatest bridge-related engineering disasters to have occurred. An enquiry determined that the bridge was insufficiently engineered to cope with high winds.



The bridge was designed by engineer **Thomas Bouch**, who received a knighthood following the bridge's completion. The bridge was a lattice-grid design, combining cast and wrought iron. The design had been used by Thomas W. Kennard in the Crumlin Viaduct in South Wales in 1858, after the use of cast iron in The Crystal Palace. The Crystal Palace was not as heavily loaded as a railway bridge. An earlier cast-iron design, the Dee bridge collapsed in 1847, having failed because of poor use of cast-iron girders. Gustave Eiffel used a similar design to create several large viaducts in the Massif Central in 1867.

The original design was for lattice girders supported by brick piers resting on the bedrock, shown by trial borings to lie at no great depth under the river. At either end of the bridge, the single track ran on top of the bridge girder, most of which lay below the pier tops. At the centre section of the bridge (the high girders), the railway ran inside the bridge girder, which was above the pier tops to give clearance for the passage of sailing ships. To accommodate thermal expansion, there were non-rigid connections between girders and piers. As the bridge extended out into the river, by December 1873, it became clear that the bedrock lay much deeper; too deep to act as a foundation for the bridge piers. Bouch redesigned the bridge to reduce the number of piers and increase the span of the girders. The pier foundations were no longer resting on bedrock; instead they were constructed by sinking brick-lined wrought-iron caissons onto the riverbed, removing sand until they rested on the consolidated gravel layer which had been misreported as rock, and then filling the caissons with concrete.

To reduce the weight that the ground underneath the caissons would have to support, the brick piers were replaced by open lattice iron skeleton piers. Each pier had multiple cast-iron columns taking the weight of the bridging girders, with wrought iron horizontal braces and diagonal tiebars linking the columns to give rigidity and stability. Bouch had used the technique for viaducts, including the Belah Viaduct (1860)) on the South Durham & Lancashire Union Railway line over Stainmore, but for the Tay Bridge, even with the largest practicable caissons, the pier dimensions were constrained by their size. Bouch's pier design set six columns in a hexagon maximising the pier width but not the number of diagonal braces directly resisting sideways forces.

On the night of 28 December 1879 at 7:15 p.m., the bridge collapsed after its central spans gave way during high winter gales. A train with six carriages carrying seventy-five passengers and crew, crossing at the time of the collapse, plunged into the icy waters of the Tay. All seventy-five people on board were killed.

Use of the bridge was restricted to one train at a time by a signalling block system using a baton as a token. At 7:13 p.m. a train from Burntisland (consisting of a 4-4-0 locomotive, its tender, five passenger carriages and a luggage van slowed to pick up the baton from the signal cabin at the south end of the bridge, then headed out onto the bridge, picking up speed.The signalman turned away to log this and then tended the cabin fire, but a friend present in the cabin watched the train: when it got about 200 yards (180 m) from the cabin he saw sparks flying from the wheels on the east side. He had also seen this on the previous train.During the inquiry, John Black testified that the wind was pushing the wheel flanges into contact with the running rail. Black explained that the guard rails protecting against derailment were slightly higher than and inboard of the running rails. This arrangement would catch the good wheel where derailment was by disintegration of a wheel, which was a real risk before steel wheels, and had occurred in the Shipton-on-Cherwell train crash on Christmas Eve 1874.

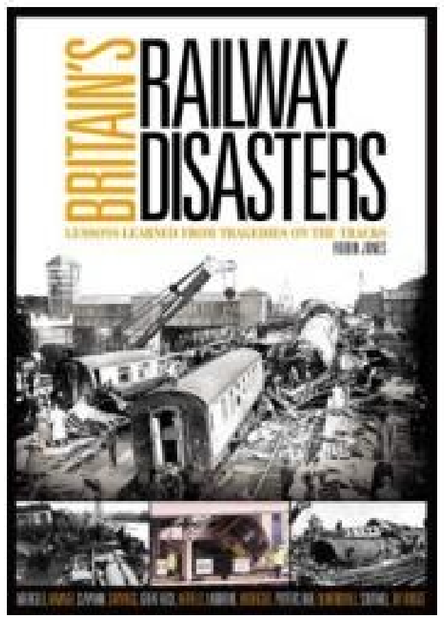
The sparks continued for no more than three minutes, by which time the train was in the high girders. At that point "there was a sudden bright flash of light, and in an instant there was total darkness, the tail lamps of the train, the sparks and the flash of light all ... disappearing at the same instant." The signalman saw none of this and did not believe it when told about it. When the train failed to appear on the line off the bridge into Dundee he tried to talk to the signal cabin at the north end of the bridge, but found that all communication with it had been lost. Not only was the train in the river, but so were the high girders, and much of the ironwork of their supporting piers. Divers exploring the wreckage later found the train still within the girders, with the engine in the fifth span of the southern 5-span division. There were no survivors; only 46 bodies were recovered but there were 59 known victims. Fifty-six tickets for Dundee had been collected from passengers on the train before crossing the bridge; allowing for season ticket holders, tickets for other destinations, and for railway employees, 74 or 75 people were believed to have been on the train.

The disaster stunned the whole country and sent shock waves through the Victorian engineering community. The ensuing enquiry revealed that the design of the bridge had not accommodated for high winds. At the time of the collapse, a gale estimated at 10 to 11 on the Beaufort scale had been blowing down the Tay estuary at right angles to the bridge. The engine itself (North British Railway no. 224) was salvaged from the river and subsequently restored for service on the railway.

The collapse of the bridge, despite having only opened nineteen months earlier and having been passed as safe by the Board of Trade, had a long-term impact on wider society. According to some commenters, it is still regarded as having been the most notorious bridge disaster to have ever occurred in the British Isles. The disaster was commemorated in "The Tay Bridge Disaster", one of the best-known verse efforts of William McGonagall. Today, the stumps of the original bridge piers are still visible above the surface of the Tay even at high tide.

It was replaced by a second bridge constructed of iron and steel with a double-track parallel to the remains of the first bridge. Work commenced on 6 July 1883 and the bridge was opened in 1887. Prior to entering service, the completed structure was subjected to an extensive examination by inspectors working for the Board of Trade. Being keen to avoid a repeat of the disaster of the first Tay Bridge, the second bridge was subjected to stringent testing, which in some cases simulated conditions that were far in excess of any ever likely to be encountered during the entirety of its service life. According to the reports submitted, the results from this testing were satisfying, clearing the way for operational use. On 11 June 1887, the first passenger-carrying trains passed along the second Tay Bridge. On 20 June 1887, which also happened to be the 50th anniversary of Queen Victoria's accession, the bridge was opened for use by general traffic. The second Tay Bridge has remained in use to the present day. To protect the structure from sustaining damage, the double-heading of locomotives is prohibited on all trains that traverse the bridge; it has been stipulated that consecutive locomotives must be separated by at least 60 feet (18 m) using barrier or reach wagons.

During 2003, a £20.85 million strengthening and refurbishment project on the bridge won the British Construction Industry Civil Engineering Award, in consideration of the staggering scale and logistics involved. More than 1,000 metric tons of bird droppings were scraped off the ironwork lattice of the bridge using hand tools, and bagged into 25-kilogram sacks. At the same time, hundreds of thousands of rivets were removed and replaced, all of which was being done by workers who were in exposed conditions while high over a firth with fast-running tides.



https://en.wikipedia.org/wiki/Tay_Bridge; Robin Jones' "Britain's Railway Disasters"

LAYOUT IDEAS – STOLBERG SWITCHBACK

O-scale 1:45
layout of the
Spijkspoor
Modelclub
- MIBA 8/2020

View video: https://youtu.be/QAy7ur-AzYs

Numbers represent:

1. Rental houses in Spinnery Street
2. Railway crossing
3. Spinning Mill Company
4. Inn “Zur Linde”
5. Petrol station with workshop
6. ‘Stranded’ Unimog
7. Track barrier in the approach to the terminus
8. Single family house with garage
9. Shed for Köf shunting Loco
10. General cargo shed of the State Railway
11. Zinc Rolling Mill “Stolberger Zink AG”
12. Kreidler racing team
13. Bus stop Münsterbusch with snack bar
14. Building Supplies
15. Scrap dealer Fritz Thomas

A. Fiddle yard Stolberg permitting turning of trains
B. Switchback (Shunting triangle)
C. Goods station
D. Fiddle yard shift stage Zink factory

Put yourself back in the late summer of the memorable year 1968. On a sunny day, the first signs of autumn are already recognizable, we visit a special railway technology: the 3.8 km long railway line from Stolberg (Rhineland) Hbf to Münsterbusch. The railway line, which is only used for goods traffic, has a switchback in front of the terminus which has to be crossed because of the difference in height.

The Stolberg switchback is a necessary part of a connecting line for an industrial area. The zinc rolling mill (11) (photo), built as a classic industrial half-timbered construction, also serves as a privacy screen with access to tracks in the Fiddleyard (D).

On the journey to the Stolberg switchback, the local goods train with loco #50 1917 stopped at the Spinnereistreet level crossing, as required by the “Halt für Zugfahrten” sign. The train driver riding in the cabin tender has just left his domicile and walked to the engineer's cab to give the driver further shunting instructions. Then he will block the level crossing with his red flag so that the train can continue.

The walk along the railway track from Stolberg to the goods station at Münsterbusch starts at the level crossing in Spinnereistreet, where we wait on the roadside for a local freight train. This announces itself in good time by a whistle signal.

The route runs through a densely built-up residential area; the trains "crawl" here at low speed up a 2.5% incline to a switchback, where they change direction to the higher terminus, the goods station Münsterbusch. Each train and shunt has to stop at the level crossing because of lack of complete view of the track ahead. The train driver or a shunter, who is responsible for observing the route from his place in the cabin tender, blocks the level crossing to road traffic with a red signal flag. If a class 94 loco is in use instead of the 50 series, its fireman takes over this task. Only after every street vehicle has clearly stopped, the train or shunting locomotive can continue whilst constantly whistling or ringing the bell.

Further up the hill, the Aktiengesellschaft Spinnerei Aachen (ASA) (3) owns production facilities for processing flax into linen cloth. Until a few years ago the plant had a siding, which has since been closed. The goods produced are now transported by truck to the nearby Münsterbusch freight station.

Behind the ASA spinning mill, the train crosses another level crossing and immediately afterwards drives into the (topographically required) switchback.

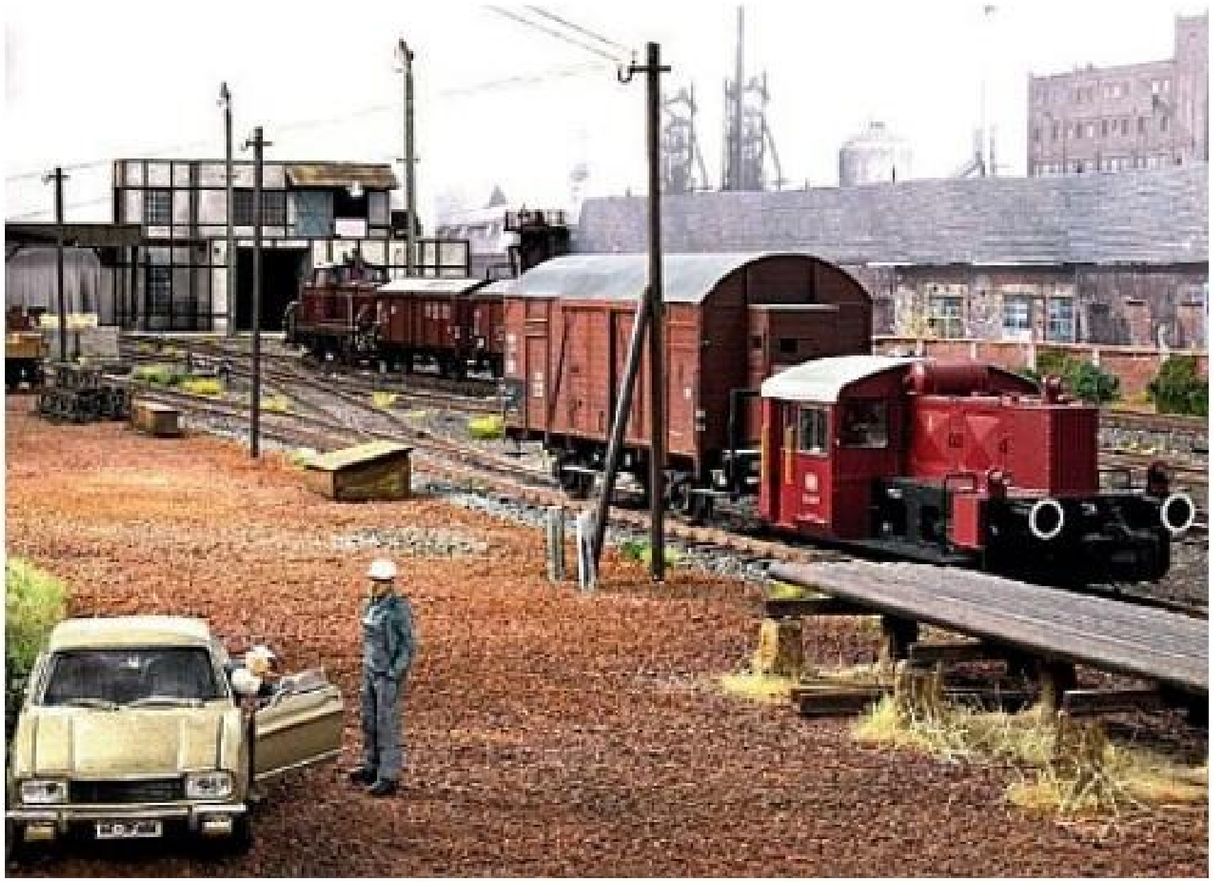
At the edge of the track is the “Zur Linde” inn (4), whose beer garden is popular - especially by railroad fans, who are of course particularly interested in what is happening on the tracks when steam locomotives are on the move. Given the good weather, the convertible dared to take a trip with the roof down.

On the other side of the building several suppliers are busy to unload the ordered goods. Beyond the tracks are meadows, fields and bushes.

In the meantime, our train has conquered the rest of the ascent and has entered the rear of the two switchback tracks (viewed from the front edge of the layout) via the double crossing points. There the wagons are manually braked and uncoupled. The locomotive moves to the previous end of the train via the stump and the front track as well as the double crossing. A brake test follows the coupling. If everything works, the double crossing is set to the position "in a curve from right to right" and the track barrier for the access to the terminus is opened. It is a safety measure, when closed, to prevent unsecured wagons rolling down the incline and entering the level crossing.

On the right hand side of the track as we approach the goods station, is the scrap dealer Fritz Thomas, freely modelled on the original. It is served by its own spur. The scrap dealer Fritz Thomas is an important transport customer. Behind the lattice mast, the track block in the driveway to the terminus can be seen, albeit slightly hidden.

The Köf takes care of individual operating trips during the train breaks. There is also a loading line where the textile products of the spinning mill are loaded, the DB general cargo shed, the “Stolberger Zink AG” rolling mill and the Boendgen building materials company.



The zinc rolling mill receives various zinc plates and other semi-finished products for further processing by rail every day. The factory delivers "zinc white" for the paint industry, among other things. The factory building, built in classic industrial framework, is already past its prime, but no one is thinking of closing for the time being.

As long as that is the case, the elevated wagons will also remain in operation, on which the small vehicles transport slag and dump it into waiting freight wagons.

In the model, the half-timbered façade with the trolley car forms a privacy screen directly in front of the background backdrop, behind which there is a second Fiddle yard (as a sliding platform). The long shed built from coarse natural stone material and bricks on the other side of the track is no longer needed by the zinc factory and is rented to the Kreidler racing team.
The company Boendgen-Baumaterialien joins the bus stop immediately following. The branching track leads to the aforementioned scrap dealer Fritz Thomas.

The track systems of the Stolberg switchback and the Münsterbusch freight station described and shown here were created in the **Spijkspoor model railway club**. They represent a not too strict replica of the connecting line between Stolberg and Münsterbusch (which has long since disappeared).

The **model railway association Spijkspoor**, which was **founded in 1971**, is one of the oldest and probably best-known model railway clubs in the Netherlands.

Foto: Roland Keller
www.eisenbahn-stolberg.de

Foto: Roland Keller
www.eisenbahn-stolberg.de

Anatomy of an Exhibition Layout by Kathy Millat

UK exhibition layouts are all unique but share a number of family traits. They drive your eye towards the sceniced area whilst hiding away the inner workings of the layout.

What does it all mean?

- Fiddle Yard
- Sector Plate
- Traverser
- Turntable
- Cassette
- Staging Yard

Select the title or the image to view her video on Youtube.

Space is short and so there are innovative ways to swap trains around such as sector plates, traversers or cassettes.

These are screen extracts from the video.

Cassettes

Cassettes

Sector Plate

Turntable

Run Through Staging

Heath Robinson - beneath

Heath Robinson - above

Scenic Area

Scenic Area

Most follow a theatre set style with pelmets and fascias framing the layout and they all have a high level of scenery. Many have quirky prototype inspiration through to downright fantasy. They ensure that they have something running to keep viewers amused and keep them from walking on.

Other details

- Lighting
  - Fluorescent
  - Spotlights
  - LEDs
- Often an integral unit
- Easy to transport
- Robust and often protective cases
- Name plates
- Skirts to hide legs

Height

Power

- Everything from DC to DCC
- Dead Rail
- Complete computerised systems
- Quirky

Owners are always happy to chat through how they built something or where they bought a certain item.

For most people in the UK, exhibitions are where you see layouts. It is rare to visit home layouts so a model railway exhibition is an opportunity to be inspired and see what everyone else is up to.

I love modelling - scenery, model rail, terrain, sci fi, military - and I want to share with you how you can make your own scenes like these.

Scenery can look hard to do but it isn't and on each video I'm going to show you how I make these stunning dioramas.

I post a full diorama build at least once a month so if you want to know more subscribe and hit the bell button so you know when the next video is up.

Kathy *https://www.youtube.com/c/KathyMillatt/featured*