

**A HISTORY OF THE
GLASGOW
INTERNATIONAL
EXHIBITION
MINIATURE RAILWAY**

**A short history of the 15" gauge railway
at the 1901 Exhibition**

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**MINOR RAILWAY
MINI HISTORIES - M7**
Revised 2nd edition

GLASGOW INTERNATIONAL EXHIBITION

MINIATURE RAILWAY

15" gauge. 1901

Introduction

It is difficult for us, living in the present times, to comprehend the scale and ambition of the temporary large scale exhibitions in the period following the Great Exhibition of 1851 up to the start of the First World War in 1914. Glasgow held two such exhibitions in 1888 and 1901 - both designated "International Exhibitions". The latter saw what was intended to be the first ever public passenger carrying miniature railway in the United Kingdom - albeit only ever intended to run for the period of the exhibition from May to November 1901. The railway was steam worked and of 15" gauge, using equipment manufactured in the United States of America. Up to this time the only miniature railways in the UK had been built by wealthy land owners for their own personal use. This history records the background and story of the 1901 International Exhibition, together with a detailed description of this pioneering miniature railway and its locomotive and coaches. The railway's legacy and influence on the development of the commercial passenger carrying miniature railway in the country is explored - for it far outweighed the short six month period it ran and the limited length of its track. All dates refer to 1901 unless otherwise stated.

Glasgow International Exhibition of 1901

Planning

Large scale exhibitions in the UK began in 1851 with the "Great Exhibition of the Works of Industry of All Nations" - more commonly known as the Great Exhibition - held in Hyde Park in London between 1st May & 15th October 1851. There were 13,937 exhibitors (of which 6,556 were from outside the country) who displayed over 100,000 exhibits. This was the main aim of the Great Exhibition and the other early exhibitions - to display objects. Sales and entertainments came in later exhibitions. There were 6,063,986 visitors to the Great Exhibition - around a quarter of the country's population at the time. It was financially successful - making a profit of £186,437 - and starting a craze for large scale exhibitions, expositions or world fairs as they became variously called.

By the end of the 19th century Glasgow was a major industrial city, manufacturing ships, railway locomotives and home to many varied industries including industrial machinery, chemicals, explosives, coal, oil and textiles. It became known as the "Second City of The Empire". The first large scale exhibition in Glasgow took place in 1888. Held in Kelvingrove Park and known as the International Exhibition, it ran from 8th May to 10th November 1888. It was visited by 5,748,379 people and made a profit of £41,700. After everything had all been cleared away plans were formulated to construct a permanent new Art Gallery & Museum in Kelvingrove Park, using profits from the 1888 exhibition and augmented by public subscription. The Foundation Stone was laid by the Duke of York in 1897.

The first suggestion for another exhibition - to inaugurate the new Art Gallery & Museum - came from the Fine Art Galleries Committee of Glasgow Corporation in January 1897. Although to be larger, the site selected was mostly the same as used for the 1888 exhibition at Kelvingrove, with the centre piece being the new permanent Art Gallery & Museum. The first sod for the 1901 International Exhibition was cut on 22nd April 1899 by the Lord Provost of Glasgow, Sir David Richmond.

The object of the exhibition was to "*present a full illustration of the British Empire, its dependencies, dominions, and colonies, and the progress in industry, science and art of all nationalities during the Nineteenth Century*". Exhibits were divided into three chief divisions: Industrial, Machine and Art. Aside from the United Kingdom and Ireland, according to the *Visitors' Guide Book*, there was "*official support from Russia, France, Austria, Japan, Morocco, Persia, Denmark, India, Western Australia, Canada, Queensland, British South Africa and South Australia*".

Opening & Description

The exhibition was opened on Thursday 2nd May at 12 noon by Princess Louise, Duchess of Fife (the third child and eldest daughter of King Edward VII) who unlocked the Grand Entrance by wielding a golden key. The day was declared a public holiday in Glasgow. A single admission ticket was 1/- for adults and 6d for children. Season tickets were available for 1 guinea (children for half a guinea) while books containing 21 single admission coupons were available for £1 (children 10/-).

Located some 1¼ miles north west of Glasgow city centre, the exhibition site was based on Kelvingrove Park, extending to the north and south banks of the River Kelvin. The entire site covered 73 acres, with 13½ acres of buildings. There were six different entrances located around the boundary of the exhibition. The main buildings were: Machinery Hall (including railway locomotives from manufacturers Barclay, Dubs, Sharp Stewart and Neilson Reid), Industrial Hall, Grand Concert Hall and the Fine Art building, which would become the permanent Art Gallery & Museum (and still exists today). There were Pavilions for France, Japan, Canada and Ireland (formed of a couple of cottages), together with a Russian Village (the largest foreign exhibit formed of four Pavilions). Also provided were a Farm, Sports Ground and numerous restaurants and other facilities.

The organisers' original attitude to amusements were that none were required and they stated stuffily "*the exhibition is of itself important and interesting enough to exist without the doubtful aid of side-shows*". However, the public thought otherwise and they relented providing a Switchback Railway, Water Chute, Rifle Range, Boats on the River Kelvin and - the subject of this work - a Miniature Railway. On Saturday 4th May, just a few days after Princess Louise opened the exhibition, the Military Exhibition at Earl's Court in Kensington, London opened to the public. The significance of this will be explained below - but it too featured a miniature railway as one of its amusements.

Planning

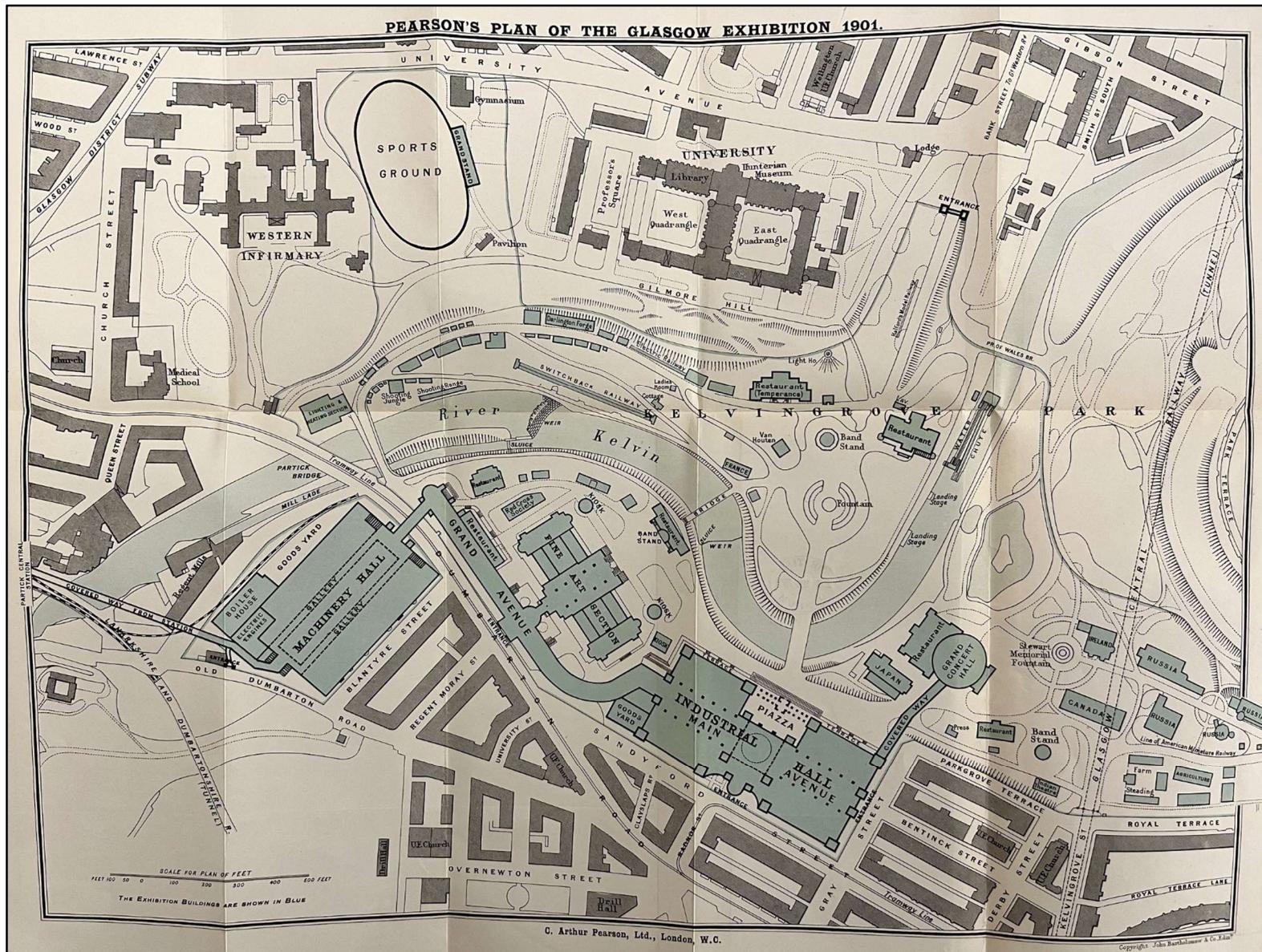
Although a miniature railway was planned as one of the amusements at the exhibition, finding space for this new feature caused a problem. However, with only a month or so before opening space was found, although it turned out not to be an ideal site. The *Glasgow Daily Mail* of Saturday 30th March was able to report "*Some months ago it was understood that among the novelties at the Exhibition would be a miniature railway, but the want of adequate space seemed likely to push this exhibit out of court. However, sufficient space has been found*". The *Scotsman* of Saturday 30th March also noted "*To the many attractions of Glasgow Exhibition there has just been added a very interesting exhibit from America. The exhibit takes the form of a miniature railway*". The unfamiliarity of a miniature railway seems to have confused the writer of the piece in *The Scotsman* who noted "*the track over which it is to run will be 12½ miles*"! They were in fact referring to the gauge, which it seems was intended to be 12½", but was eventually laid as 15".

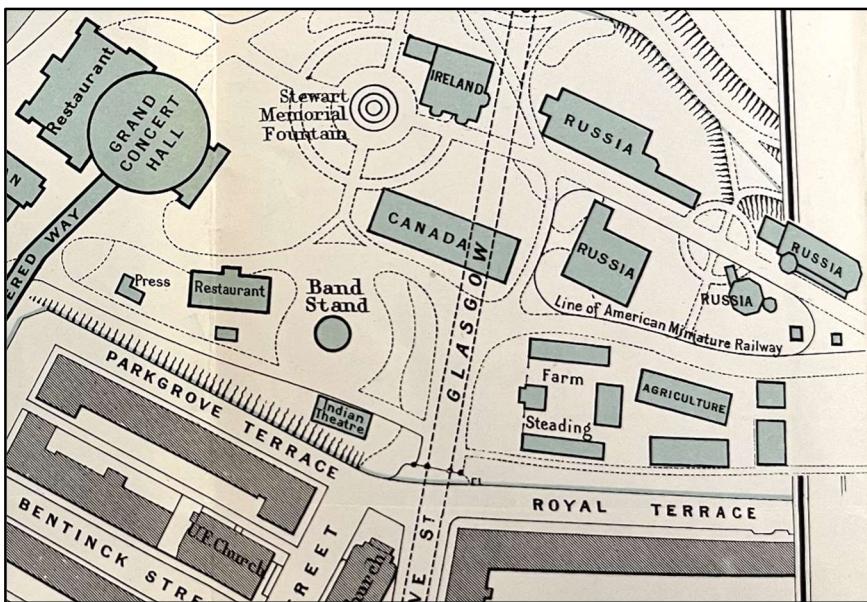
The *Glasgow Daily Mail* report concluded by describing the route of the railway "*The "smallest train in the world" will run from the Canadian building to the Queen's Rooms, returning by way of the Russian Section, and will it is stated, be the first ever introduced into this country*". Pearson's Guide to the exhibition noted "*Beside the Russian buildings at the eastern end of the grounds is a miniature railway track, with an exact reproduction of a full-sized passenger train made up of engine, tender and ten cars with a carrying capacity of twenty passengers, and capable of travelling at the rate of ten miles an hour*".

The location was at the far eastern end of the exhibition site, near the Clifton Road entrance (NS573566214). The railway was a circuit of 300 yards in length (scaled from the plan in Pearson's Guide). At its western end it passed to the side of the Canadian Pavilion before running in front of the Farm and Agricultural Hall before curving sharply back to run along the avenue through the Russian Village. The Russian Village was the largest exhibit in the exhibition and was formed of four remarkable timber buildings, whose construction fell behind and were not ready for the opening on 2nd May. The railway was unfenced and there does not seem to have been a station platform or building. Photographs show the track was laid into the gravel surface of the road and pathways - no sleepers being visible. George Woodcock in his book *Miniature Steam Locomotives* (David & Charles 1964) noted the track was "*laid with light 9 lb rails clipped to pressed metal sleepers*".

Next page: A plan of the exhibition taken from *Pearson's Gossipy Guide to Glasgow, The Clyde & The 1901 Exhibition*. The River Kelvin can be clearly seen meandering through the middle of the exhibition. The three largest buildings are (left to right), Machinery Hall, Fine Art Section (which became the permanent Art Gallery & Museum) and Industrial Hall. To the lower right is the circular Grand Concert Hall and then the Miniature Railway further to the right (east). An extract of this area of the plan appears on page 5. The Sports Ground is at the top (north) of the plan, situated between the Western Infirmary and the University. The Switchback Railway lies on the north bank of the River Kelvin below the University. The Water Chute can be seen to the centre right of the plan in the River Kelvin, just below the Prince of Wales Bridge. Note the Caledonian Railway's Glasgow Central line, in a tunnel, passing under the Canadian Pavilion and near the miniature railway.

Glasgow International Exhibition Miniature Railway





An extract from the plan on the previous page, showing the original circular layout of the "American Miniature Railway". Note the nearby Pavilions for Ireland & Canada and the four Pavilions forming the Russian Village through which the railway ran. The Farm and Agriculture Hall are on the south side of the circuit. The Stewart Memorial Fountain predates the exhibition, being erected in 1872 to mark the contribution by Lord Provost Robert Stewart to pass the Loch Katrine Act, which paved the way for a fresh water supply for the City.

Locomotive & Coaches

As alluded to in the piece in *The Scotsman* of Saturday 30th March the complete railway came from America. It was supplied by the Miniature Railroad Company and included a 4-4-0 Cagney locomotive and coaches. Developed in America, the origins of this family of locomotives go back to around 1885 when Peter and Thomas McGarigle came up with the idea of a small railway capable of carrying passengers. Their work came to the attention of the Cagney brothers: Timothy, David & John, who formed the Miniature Railroad Company of Broadway, New York City in 1898, to market and operate miniature railways. The relatively small, but rugged, 4-4-0 locomotives were naturally of American outline and were eventually built to 12 $\frac{5}{8}$ " gauge (class C), 15" gauge (class D) & 22" gauge (class E). Livery was usually black. Cagney's normally supplied a locomotive complete with a set of 10 coaches and both were built by the McGarigles in their workshops at Niagara Falls, New York. Over the years, more than 1,300 of these locomotives were produced and exported all over the world. Inevitably, a few details varied somewhat and later locomotives (mainly after 1904) were built by Herschell-Spillman at their factory in North Tonawanda, New York. It needs an expert eye and a good photograph to tell the difference!

It is worth quoting at length the article in the *Glasgow Daily Mail* of Saturday 30th March as it gives a good deal of detail about the locomotive and the coaches. *"The engine, which is of the standard eight-wheeled American type, is 5ft 4in in length, 18in in width, the height from the rails to the top of the smoke stack being 28in. The boiler, built of steel, is 10in in diameter, holds 10 gallons of water, and is tested to 400lbs to the square inch. Coal is used for fuel. The tender is 3ft 5in long, 18in wide, and the total length of engine and tender together is 8ft 9in. The driver gets on top of the tender, from which he operates the throttle, reversing lever etc. The cars are 5ft long and 22in wide. Each seats two passengers, children or adults, and springs*

are attached to insure an easy and pleasant ride. Track gauge is 12⁵/₈in, and a speed of ten miles an hour can be attained". The figures quoted by the paper were clearly an abridged version of what was printed in Cagney's Catalogue and refer to a class C 12⁵/₈" gauge locomotive and coaches.

It was obviously originally intended to employ a class C railway, but at some stage this was changed to the larger 15" gauge class D. The *Model Engineer* of 15th October confirms this by stating "*Perhaps the best patronised of all the model exhibits is the miniature railway, which is running daily in the grounds. Many of you may have seen the model railway now on view at the Earl's Court Exhibition, which is very similar to the one at Glasgow, though a little smaller in size*". It then goes on to list the same dimensions, which supports it as being a class D railway - although it incorrectly quotes the gauge as 14¹/₂". Contemporary newspaper reports quote the gauge as 15". The *Railway Magazine* of November 1901 confirms this when describing the class C line at the Military Exhibition at Earl's Court, adding that an example of a class D line "*may be seen at the Glasgow Exhibition*". The leading dimensions of a class D 15" gauge locomotive (taken from the company's 1901 catalogue) were: overall length 9ft 6in, height 3ft, with 10¹/₄in driving wheels and a bogie tender. Weight was 1,000 lbs (9 cwt). The upper photograph on page 21 shows the locomotive was built in 1900 and was therefore probably supplied new. The coaches were of the 4w type, each seating two people - adults or children. Photographs show they had ornate decorated sides - these being known by Cagney as a "Small Gold Medal Special Car". These had padded seats and were designed to be easily taken apart and reassembled. The reports above note there were 10 coaches (which was the number Cagney always supplied with each locomotive) - the maximum that can be seen in use in any of the photographs of the railway, however, is 8.

None of the contemporary newspaper reports or the exhibition guides make any mention of who promoted the railway and arranged its importation from the USA. It presumably ran as an amusement concession in the exhibition, similar to the Switchback Railway and Water Chute. The earliest reference we have to the promoter comes in *Miniature Railways Volume 1 - 15 Inch Gauge* by Howard Clayton, Michel Jacot & Robin Butterell (Oakwood Press 1971). The authors inform us it was Captain Paul Boyton, who also held the concession for the miniature railway in the grounds of the Military Exhibition at Earl's Court where, as noted above, he operated a class C 12⁵/₈" gauge railway supplied by the Miniature Railroad Company. One rather assumes Captain Boyton was trying out the class C and class D railways to see which was most suitable for use in the UK!

Paul Boyton (1848-1924) was a very colourful character with a fascinating past. He was a showman, adventurer and an early pioneer of water sports. He used a rubber inflatable life-saving suit to float and paddle across the English Channel in 1875. Using the suit he travelled along various rivers across the world, his longest trip being 3,580 miles from Cedar Creek in Montana to St Louis in 1881. He gained his title when he became Captain of the first life-saving service in Atlantic City. In 1895 he founded Sea Lion Park on Coney Island, New York, one of the first modern amusement parks, which he enclosed with a fence and charged an admission fee. In 1893 he presented the "World's Water Show" in Earl's Court, London and in his obituary it was stated he was a pioneer of Water Chutes there.

Construction

With the site and route selected, together with the locomotive and coaches sourced, construction of the railway could commence. An interesting photograph (see page 16) appeared in the *Black & White* newspaper of Saturday 4th May - titled "*Trying a Car on a Miniature Railway*" it shows one of the ornate sided 4-wheel coaches being tested on clearly freshly laid track. Looking west towards the Stewart Memorial Fountain, with the Irish Cottages to the right and the dome of the Grand Concert Hall to the left, the track can be seen curving away left to run towards the Canadian Pavilion - and apparently down a gradient (the ground in the area sloped gently down to the south). Unfortunately, this was to cause the railway some difficulty later.

On Thursday 25th April the press from "*far and wide*" were invited to view the exhibition. The reporter from the *Glasgow Daily Mail* provided a very detailed description in the paper for Friday 26th April but had little to say about the railway, merely noting in a paragraph about the Farm and Agricultural Hall "*A miniature railway, with model engines and carriages, large enough to carry passengers, runs round a portion of this section*". The report continued with details about the Russian Pavilions and added "*they are as yet in the hands of the builders, and it is understood that their contents will not be available for some weeks to come*".

GLASGOW INTERNATIONAL EXHIBITION, 1901,

OF
INDUSTRY, SCIENCE, AND ART.

PATRON,
His Most Excellent Majesty THE KING.

President—The Right Hon. THE LORD BLYTHESWOOD of Blytheswood; Chairman of the Executive Council—The Hon. THE LORD PROVOST OF THE CITY OF GLASGOW.

THE FIRST INTERNATIONAL EXHIBITION OF THE CENTURY

WILL BE OPENED, IN NAME OF THE KING,
ON THURSDAY, MAY 2nd,
AT 12 NOON,
By H.R.H. THE DUCHESS OF FIFE
AND
The Most Noble THE DUKE OF FIFE
(Lord Lieutenant of the County of Fife).

BAND OF THE ROYAL ENGINEERS (by kind permission of Major-General Sir T. Fraser, K.C.B., C.M.G., R.E.), and the

DENTON ORIGINAL PRIZE BAND (Winners of the 1900 Guinea Trophy at the Crystal Palace, July, 1900).

TROPHIES FROM SOUTH AFRICAN BATTLEFIELDS. Cestly Display of the Products, Industry, and Art of Russia, France, Austria, Japan, Morocco, Persia, &c.

Unique Display by the BRITISH COLONIES, including Western Australia, Queensland, and the Dominion of Canada, and British South Africa.

THE MANUFACTURES OF INDIA.

Water Chute in River Kelvin; Electric Launches, Gondolas, &c.; Indian Theatres (Juggling, Snake-charming, &c.); Switchback Railway; Miniature Railway; Military Rifle Range; Shooting Janglo.

Grand Football Match—CELTIC V. RANGERS (Glasgow Charity Cup) at 6 p.m. on the Opening Day.

MACHINERY IN MOTION.

Great Collection of British Industries in the Grand Avenue and Industrial Hall.

On the Opening Day, THURSDAY, 2nd May, the Exhibition will be Open to the Public at 3 p.m.

ADMISSION—Adults, 1s. Children under 14 years of age, 6d.

Season Tickets—Adults, One Guinea. Children, 10s 6d.

H. A. HEDLEY, Manager and Secretary.

An advert from the *Edinburgh Evening News* of Wednesday 24th April, announcing the forthcoming opening of the exhibition on Thursday 2nd May at 12 noon by the Princess Louise, Duchess of Fife and the Duke of Fife. The Miniature Railway is listed among the amusements on offer.

With the opening of the exhibition to the public fixed for Thursday 2nd May all was set for the opening of what should have been the very first public passenger carrying miniature railway in the country - unfortunately, it seems things did not turn out that way. *The Scotsman* of Wednesday 1st May was able to report "*As to the buildings in the grounds, Russia's pavilions excepted, they are ready to welcome the visitor; and the Water Chute and the Switchback, the Miniature Railway, and the Shooting Jungle even now await public inspection*". The *Daily Record* of Wednesday 1st May went further confidently reporting "*All the amusements will be in full swing tomorrow afternoon - the Switchback, the Miniature Railway, the Water Chute etc. They have been thoroughly tested during the last day or two, and found to work smoothly and satisfactorily*". Sadly, the confidence of the *Daily Record* reporter was misplaced and, of three rides listed, only the Switchback Railway appears to have worked "*smoothly and satisfactorily*" from opening.

Opening

The exhibition was duly opened on Thursday 2nd May at 12 noon by Princess Louise and the public were admitted from 3pm and until the grounds closed at 10pm. But did the railway start running the same day? Probably not, it appears. We are fortunate that the *Daily Record* carried a daily report and update on the exhibition from Wednesday 1st May and it provides a valuable insight as to the difficulties the railway (and the Water Chute) experienced in the early days of the exhibition.

In its very detailed article about the opening of the exhibition and the description of the buildings and grounds the *Glasgow Daily Mail* of Friday 3rd May noted "*Running around the Russian quarters will be a miniature railway, which is an exact re-production of a full-sized passenger train, made up of engine, tender, and ten cars, with a carrying capacity of 20 passengers or 40 children. It will travel at the rate of 10 miles an hour. Young and old will be delighted with this latest enterprise, which should be called the Innocent Railway. The engine and tender weighs about 15cwt, and runs upon a 15-inch gauge. For over a week steam has been kept up, and one smiles at the uproarious whistle of the "mite" when the rails are obstructed*". The *Daily Record* of Friday 3rd May, without specifically mentioning the railway, reported "*Of the outdoor attractions the switchback railway claimed greatest patronage, but such an opinion could only be ascertained officially for a casual visit seemed to indicate that each and every feature of the Exhibition received a full measure of attention*". The reporter from the *Dundee Courier* of Friday 3rd May only had "*time to give a hurried glance at the barbaric design and colouring of the Russian buildings, round which runs the funniest of miniature railways*".

Princess Louise, Duchess of Fife and the Duke of Fife returned for a private visit to the exhibition on Friday 3rd May and the grounds were closed to the public during the time they were there. The *Daily Record* of Saturday 4th May noted the Royal party viewed the Russian Village and the Canadian Pavilion, but did not mention if they inspected the railway. The paper noted after the public were admitted the Switchback Railway did "*roaring business*" but the Water Chute was not in operation. It did not mention the railway.

From these first reports about the opening day and the first few days of the exhibition none make any specific reference to the miniature railway being in operation or how many passengers were carried. It is perhaps likely, some passengers were carried initially before problems were discovered in its operation. The *Glasgow Daily Mail* report of Friday 3rd May

certainly implied it had been running - at least on test before the opening. However, the *Daily Record* of Friday 10th May clearly stated "*The miniature railway is not yet in operation, and it looks as if several days must elapse before it can be set going. When it does begin to work it will be one of the most popular amusements in the grounds*". This report does suggest it hadn't yet carried any passengers. The *Elgin Courant* of Friday 10th May also noted "*The miniature railway is not working yet. There are about ten carriages. The little engine puffs the smoke into the driver's face, the funnel being too small. The fuel used is coke and coal*". The railway was not the only one of the amusements having problems. The Water Chute only went into public service on Friday 10th May, but even then did not work reliably for a while.

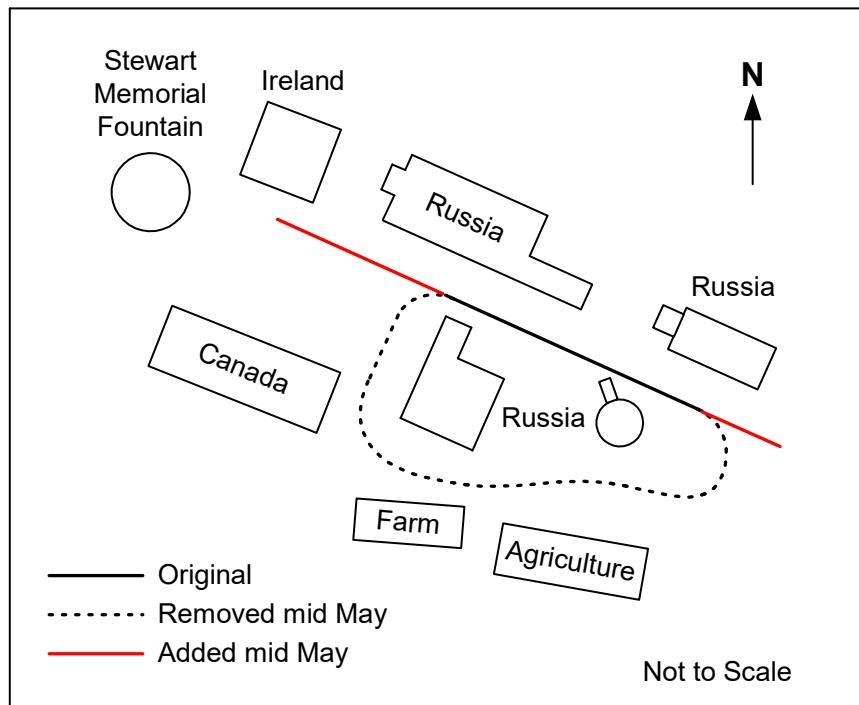
It appears the railway finally opened on Saturday 11th May - the *Daily Record* of Monday 13th May reported "*There is at present a scarcity of amusements within the Exhibition. The Indian Theatre is not open, the miniature railway is just beginning, and the water chute is working by fits and starts*". The exhibition did not open on Sundays. However, despite its delayed start it proved immediately popular, so much so that children were having difficulty getting a ride. The *Daily Record* of Tuesday 14th May noted "*It was thought at one time that the children would be the best patrons of the miniature railway, but their elders are not averse from a trip past the Russian erections. Hundreds of them jostled each other in their endeavours to get seats, and many youngsters were compelled to wait a long time before they could get places*". It then went on to ask "*Surely when amusements for the young are so few, the railway might be set apart for them more exclusively than at present*". The difficulty in getting a ride was probably due to the fact the railway was not running well. The *Glasgow Daily Mail* of the same day reported on complaints of overcrowding in the grounds and observed "*had the Indian Theatre been open, the water chute working, the Russian section in order, the miniature railway going smoothly, and so forth, the crushing of which we heard several complaints yesterday would have been altogether avoided*".

The *Daily Record* of Wednesday 15th May explained why the railway was not in full working order, with only a short run available "*The engine and carriages were able to make only a run on the straight section of some 70 or 80 yards, the railroad on the south side of the Russian section having been damaged by the conveying of exhibits into the Russian buildings. But notwithstanding the short ride the miniature railway had a busy day, and there can be no question as to its popularity*". The paper went on to point out again the railway was the only attraction the younger children could enjoy and "*for their sake it is hoped it will soon be running better*". The report then went on to say it was proposed to alter the track layout into a straight end-to-end run "*it is proposed, we believe, to cut the present railroad, and lay another from the Kelvingrove entrance right to the large fountain, and if this is done there should be no more hitches*". The "*large fountain*" the *Daily Record* referred to was the Stewart Memorial Fountain, erected in Kelvingrove Park in 1872 (thus predating both the 1888 & 1901 exhibitions). It commemorated the contribution of Lord Provost Robert Stewart to the campaign to pass the Loch Katrine Act of 1855, which paved the way for a fresh water supply for the City and the consequent improvement to public health.

The *Daily Record* of Thursday 16th May revealed what was probably the main reason the railway was not operating reliably "*The Miniature Railway did good business yesterday, the takings running well into double figures. The little engine was a source of constant merriment. It did the straight lap splendidly, so that the journeys were double - twice there and back for the one fare, curves and gradients being thus avoided. It is expected that the straight run will be lengthened in each direction shortly*".

The sharp curves (especially at the eastern end of the circuit near the Clifton Street entrance) and the gradients to and from the lower part of the circuit past the Farm and Agricultural Hall were, it appears, too much for the locomotive with a fully loaded train. Frederic Shaw in his book *Little Railways of the World* (Howell-North Press 1958), when discussing the performance of the early class C and class D locomotives, remarks that both "operated well on a level track. It soon became apparent, however, that more power was needed from a better steam generator, for they made heavy work with a paying load on even the slightest grade". Cagney expert Nick Wantiez states in "1903 the class D was modified to increase its weight and eliminate some operational problems" (Reprint of 1901 Cagney Catalogue, Plateway Press 1998). Perhaps Captain Paul Boyton should have consulted the Cagney Catalogue more carefully, for there it states their locomotives "can be operated by a child either upon straight or circular track, but we recommend, wherever possible to operate it on a straight track". But, of course, space was at a premium in the exhibition site and the railway was not part of the original design of the grounds.

Presumably, over the next few days the railway was extended to a longer end-to-end run, probably using track from the southern part of circuit. Photographs (most of which seem to have been taken after the layout was changed) show it then ran from close to the Stewart Memorial Fountain in the west by the Irish Cottages and through the middle of the Russian Village. The eastern extent of the railway is not known, but the *Model Engineer* of 15th October states the line was 160 yards in length, so it probably did not run much beyond the extent of the previous circuit. After that the railway seems to have settled down to run more smoothly and efficiently.



A plan showing the alterations made to the railway in mid May, changing it from a circuit to an end-to-end layout. The new section at the eastern end is purely conjectural.

Ongoing Operation

The exhibition *Daily Programme* for Saturday 14th September - presumably a typical day - informs us that the gates opened at 9.30am and the various amusements, including the railway, then operated from 10am until dusk. The gates closed for admissions at 9.30pm and the exhibition closed at 10pm. It also listed the charges for the amusements: Switchback Railway 3d, Miniature Railway 2d, Boats on the River Kelvin 3d, Rifle Range 1d, while a plunge into the River Kelvin on the Water Chute was 6d, which *Glasgow's Great Exhibitions 1888-1988* (White Cockade 1988) called "*quite an expensive treat*". The *Brighouse News* of Friday 9th August remarked the railway "*is not the play thing of children merely, but the grown-ups hold it as necessary to have twopennyworth on the little railway*". The railway was reasonably well photographed - all these show the locomotive hauled trains eastwards away from the Stewart Memorial Fountain and propelled them back.

Parties of children visiting the exhibition also had a ride on the railway. Or as the *Glasgow Daily Mail* of Saturday 18th May put it in the style of the time "*During the week several ladies were seen with bevies of sunny-haired and gaily dressed children about them doing the Exhibition. The children were taken to the more attractive stalls, thereafter they had a ride on the switchback and the miniature railway, and wound up the afternoon with an alfresco tea*". It doesn't say whether they had a ride down the Water Chute - perhaps their "*gaily dress*" might have got too wet!

However, the railway was still suffering some problems. The *Daily Record* of Tuesday 21st May reported that on Monday 20th May "*Amongst the first invaders of the grounds was an army of neatly dressed and highly-delighted school children*". The paper noted the party numbered about 400 children who were later to give a Cantata in the Concert Hall, but "*It was a source of disappointment to them that the miniature railway was again off*". It went on to explain the locomotive had failed "*The train was on its second run and steam was full up in the engine, when the cylinder plate blew off, and the engine had to be put aside for repairs, which occupied the remainder of the day*". The report also noted the railway was proving very popular and "*not just with young folk*" and concluded by stating "*one day last week*" the railway carried 1,200 passengers 51 miles in six hours.

The *Daily Record* of Wednesday 12th June reported that the railway had its busiest day on Saturday 8th June "*The miniature railway has beaten its record. The traffic returns for Saturday showed that 2040 passengers had been carried*" and noted smugly that this was "*a higher number than was carried during any one day in Earl's Court*". The Russian Village finally opened on Tuesday 11th June, which probably attracted more visitors to that area of the exhibition and also see or ride on the railway. Thankfully, some of Glasgow's less fortunate residents were able to enjoy the railway. The *Daily Record* of Saturday 29th June reported that during the afternoon of Friday 28th June children from the City Poorhouse were "*shown over the Exhibition. The youngsters enjoyed the switchback and the miniature railway and were provided with buns and milk at the dairy farm*".

Interruptions to the service were still occurring. The *Daily Record* of Friday 5th July noted "*The miniature railway - the children's chiefest joy - will resume running today*". The paper commented that it had been "*thoroughly overhauled*" and explained the "*temporary cessation of business was due to the wearing away of the undergear, owing to contact with the gravel on the track*". This was hardly surprising, given the gravel on the pathway on which the railway ran appears in photographs to have been only just below rail level. The *Greenock Telegraph* of

Saturday 6th July remarked "*The miniature railway, which has recently been undergoing repair, restarted yesterday, and seemed to be as popular as ever*".

Over time various provincial Scottish newspapers sent their journalists to the exhibition. The reporter from *Montrose Standard* of Friday 5th July was obviously impressed by the miniature railway - probably the first he had ever seen - and he remarked it "*possesses tiny cars and a cheeky little engine which puffs and squeals in the most impudent manner imaginable. The man who stokes and drives it, looks ridiculously big in comparison, and yet this dwarf engine is capable of drawing about a dozen cars full of adults!*". The *Kirkintilloch Herald* of Wednesday 24th July provided its readers with a guided tour of the exhibition. "*Having "done" Russia, the visitor will best give account of his time by making his way to the Canadian Section, but we have to be careful as we go, as there is the risk of a railway accident. A miniature railway intersects the Russian exhibition*". The paper noted that the railway was originally intended to have a circular route and added "*The railway is rather restricted, running only some 200 yards, and then returning with engine behind*". The reporter amusingly remarked "*With a load of children it can develop a wonderful speed, but as we have seen it, on a market day, loaded with bulky bucolic gentlemen whom it could hardly move*". Moving on the paper added "*Having safely negotiated the railway the visitor soon finds himself in the Land of the Maple*" - the Canadian Pavilion.

The *Daily Record* of Friday 2nd August reported that among the visitors to the exhibition during the previous day were John Mathieson (1846-1906), General Manager of the Midland Railway and David Cooper (1855-1940), General Manager of the Glasgow & South Western Railway. The paper noted "*Both gentlemen patronised the miniature railway*". It would be interesting to know what these gentlemen thought of the railway, grappling daily as they did with very much larger railway concerns. As summer moved into autumn, locals and those from further afield made their final visits to the exhibition and grabbed a last ride on the miniature railway. The *Daily Record* of Saturday 19th October commented the "*rapid shortening of the days is telling on amusements*" and passengers were getting scarcer every day except on Saturdays. It went on "*even the miniature steam railway is losing its attraction for the younger folks. The tiny engine, however, continues to belch and whistle as loudly as ever and evidently means to take advantage of the few remaining days to make up in some degree for the breakdowns which it has suffered*".

Closure & Afterwards

The exhibition closed on Saturday 9th November after what the *Dundee Courier* of Monday 11th November called "*six months' unbroken success*". There was a closing ceremony in the Grand Concert Hall at 8.30pm and police finally cleared the grounds by midnight. Despite rain falling for most of the day, there was a record attendance of 173,266 for the final day. When a "representative" from the *Dundee Courier* visited on Sunday 10th November he found "*all was in order*" and preparations were being made to remove the exhibits, which was due to start the next day at 9am. The *Daily Record* of Thursday 14th November reported that "*the miniature railway lines have now been lifted, and the little engine and carriages which were such a feature in the grounds during the run of the Exhibition, were yesterday removed on a lorry*". Unfortunately, the report does not name their destination.

The six months that the exhibition had been open saw exceptionally good weather and this helped to push the total overall attendance to reach 11,497,220. This could be compared to the 1888 Glasgow International Exhibition (5,748,379) and the 1851 Great Exhibition in London (6,063,986), which both took place over the much same six months period (although it should be noted the population of UK was roundly 41m in 1901, 35m in 1888 and 21m in 1851).

The *Dundee Evening Telegraph* published an "Official Report" of the exhibition on Monday 20th October 1902 and the "Official Statement of Accounts" on Friday 28th November 1902. Taking these two together the table below for the various amusements has been assembled.

	Attendance	Gross Takings £ s d	Amount to Exhibition £ s d
Miniature Railway	151,731	1,264 8 6	627 5 6
Switchback Railway	1,011,134	12,706 19 1	9,312 0 7
Water Chute	650,719	15,281 1 10	5,298 18 5
Boats on River Kelvin	87,117	1,084 10 6	139 8 9

From this it can be seen that Captain Paul Boyton took £637 3s 0d (around £98,120 today) although from this he had to purchase or hire the locomotive and coaches, and obtain and lay the track. Presumably, he also had to provide a number of drivers. An attendant probably provided by the exhibition no doubt collected the fares.

The exhibition itself was an undoubtedly success and made an estimated profit of £30,571 (as stated in November 1902) with a final figure of £39,000 published in 1905 (a little less than the 1881 exhibition's £41,700). The profit was set aside for the Art Purchase Fund to make additions to the Art Gallery collection. After closure the buildings and almost everything else was cleared away and the park restored. The Fine Art building remained to become the present day Kelvingrove Art Gallery & Museum. Part of the site, including that of the miniature railway, was used for the 1911 Scottish Exhibition of National History, Art and Industry. This did not feature a miniature railway, although it did have the unusual "Hamilton's Aerial Railway". Today, the area where the miniature railway ran in 1901 forms part of the open parkland of Kelvingrove Park. The Stewart Memorial Fountain remains, having seen three exhibitions take place around it.

There has been some discussion over the years as to what happened to the Cagney locomotive after the exhibition closed and the railway removed. George Woodcock in his book *Miniature Steam Locomotives* (David & Charles 1964) stated incorrectly there were two Cagney locomotives at the exhibition but went on to note "*these were later purchased by Mr Bartholomew of Blakesley Hall, Northamptonshire*". In a 1973 letter reproduced in the *Heywood Journal No.11* (October 1981) Charles Simpson also states (twice) the Cagney locomotive was acquired by Mr Bartholomew for the railway at Blakesley Hall. Charles Bartholomew, the local squire, built his private 15" gauge estate railway at Blakesley Hall in 1902 and it did have two Cagney locomotives at one time. Dr Bob Tebb extensively researched this railway for his book *The Blakesley Miniature Railway* (Silver Link Publishing 2009) and conclusively disproves this theory. He states "*the Glasgow Cagney was recognisably different and of earlier build [from that at Blakesley], having a sheet-steel cab and lacking the four fixing studs on the smokebox front, used on such locos from 1902, including that at Blakesley. Anyway, the Blakesley loco had "1902" cast on its smokebox ring, thereby confirming that it could not be from the Glasgow line*". Photographs in the book show the second Cagney was also not the locomotive from the exhibition.

However, it was Wolverhampton the locomotive moved to. An Art & Industrial Exhibition was held in West Park, Wolverhampton from 1st May to 8th November 1902, which featured a 15" gauge railway - although it only ran from Friday 27th June to Saturday 1st November 1902 - not the full period of the exhibition. The *Express & Star* of Monday 23rd June 1902, describing the railway at Wolverhampton, reported "*Today the work of laying the lines was commenced. The rails are laid on sleepers in the ordinary way, the gauge being fifteen inches. At Glasgow this railway was very popular alike with adults and children. It will certainly be a novelty in Wolverhampton*". The promoter of this railway was Charles Kiralfy.

What became of the Glasgow exhibition Cagney, following its use at the Wolverhampton Exhibition in 1902, is impossible to say. Captain Paul Boyton did operate a railway at Alexandra Palace in north London between March 1903 and April 1904 with a Cagney locomotive. However, photographs show this was not the locomotive from Glasgow (it has the four fixing studs on the smokebox front, which the Glasgow example lacks) - also the coaches were of a bogie type with covers. Cagney locomotives operated at White City in Manchester (1907-1909), Crystal Palace (1910), Southend Kursaal (from 1910) and at the Liverpool Exhibition (1913) all have the four fixing studs on the smokebox front, ruling out their being the ex-Glasgow locomotive. Of course, it is always possible it was taken back to America! Identification of Cagney locomotives is always not easy and they moved around all too easily - as they were originally designed to do!

Conclusion & Legacy

The Glasgow International Exhibition, with its 15" gauge railway, opened on Thursday 2nd May and the Military Exhibition at Earl's Court in London, with its 12 $\frac{5}{8}$ " gauge railway, opened on Saturday 4th May. Therefore, by rights, the Glasgow line should have been the first public passenger carrying miniature railway in the UK. Clearly, that was the intention. However, although a few passengers may have been carried before, it seems it did not start running until Saturday 11th May. The *Daily Record* of Friday 10th May clearly stated "*The miniature railway is not yet in operation*" [Author's underlining]. Therefore, it appears the line at Earl's Court must be awarded the title of the first public passenger carrying miniature railway in the UK - unless it also had problems starting operation. However, there is nothing to suggest it did - its layout was simpler and shorter. The plan of the exhibition in the *Official Guide & Catalogue* shows it could not have been more than 80 yards in length - in a straight end-to-end layout. That aside, the Glasgow line seems to have received more attention and was much better photographed.

So what was the legacy of the miniature railway at the Glasgow International Exhibition and what influence did it have on the development of miniature railways in the UK? The simple answer is that it had a profound impact. Up to the time of the exhibition the only miniature railways in the country were the work of private individuals, which were not available to the public to enjoy. The most prolific in this field was Sir Arthur Heywood (1849-1916). The two men who were the most influential in developing some of the first permanent public miniature railways in the country were Wenman Joseph Bassett-Lowke (1877-1953) and Henry Greenly (1876-1947); and we know both gentlemen visited the exhibition and saw the miniature railway at work. Bassett-Lowke had founded the Northampton based company model-making firm bearing his name around 1898. It is was through *The Model Engineer & Amateur Electrician* magazine (which was founded in January 1898) that he met Henry Greenly. They formed a strong bond and Greenly became his consulting engineer in 1901. Henry Greenly was a

contributor to the magazine and one of the most important miniature railway engineers of the 20th century. He was a prolific model and miniature railway locomotive designer and author. However, that was in the future. We know from *The Miniature World of Henry Greenly* by Ernest & Elenora Steel (Model & Allied Publications 1973) that Henry Greenly visited the exhibition accompanied by Percival Marshall, editor of *The Model Engineer & Amateur Electrician*. *"Greenly was particularly interested in a 15-inch gauge railway on which an American type 4-4-0 locomotive was in steam and hauling small coaches loaded with visitors around the grounds"*. The authors go on to state *"The performance of the engine at Glasgow undoubtedly fired Greenly with the ambition to design a miniature locomotive to run on a similar gauge, but one of British type and outline and manufactured in Britain"*.

Bassett-Lowke apparently did not visit the exhibition with Henry Greenly. However, in his book *The Bassett-Lowke Story* (New Cavendish Books 1984) Roland Fuller states Bassett-Lowke *"Visited every big exhibition in Northern Europe since 1901"*. Additionally, Peter van Zeller in an article in the May 1999 edition of *Railway World* states that Bassett-Lowke *"Attending the Glasgow International Exhibition in 1901 he saw the popularity of the miniature American 4-4-0 offering rides on its short length of 15" gauge track"*.

Having seen the railway at the exhibition (and probably that at Blakesley Hall) Bassett-Lowke and Greenly set out to design, build and operate miniature railways themselves - but with British outline locomotives of a more attractive design. Bassett-Lowke was convinced a locomotive built to scale proportions could give a satisfactory and profitable performance. Hence the well-known "Little Giant" locomotive was born. Miniature Railways of Great Britain Limited was established in December 1904 by Bassett-Lowke, Henry Greenly and others to design, build and operate passenger carrying miniature railways. The Company's first venture was a 10¼" gauge line on a site adjacent to Abington Park in Northampton, which opened on Easter Saturday, 22nd April 1905. In the same year the Company opened the first permanent public passenger carrying 15" gauge railway in the country. This was built on the South Shore Sands at Blackpool and opened on Whit Monday, 12th June 1905. Motive power was a "Little Giant" 4-4-2 locomotive designed by Greenly and built at the Bassett-Lowke works in Northampton - the first of many similar locomotives. The location of the railway was not ideal - but Greenly's handsome locomotive was an undoubtedly success.



This interesting picture was titled "*Trying a Car on a Miniature Railway*". One of the ornate 4-wheel "Small Gold Medal Special Cars" is being tested at the north western corner of the circuit on freshly laid track. In the background, the Grand Concert Hall is to the left with the Stewart Memorial Fountain in the centre and the Irish Cottages to the right. Note the downward slope of the land to the left. Tools and materials lay around. This view could have been taken on the press day - Thursday 25th April. A number of interested gentlemen look on, having probably never seen a miniature railway previously!

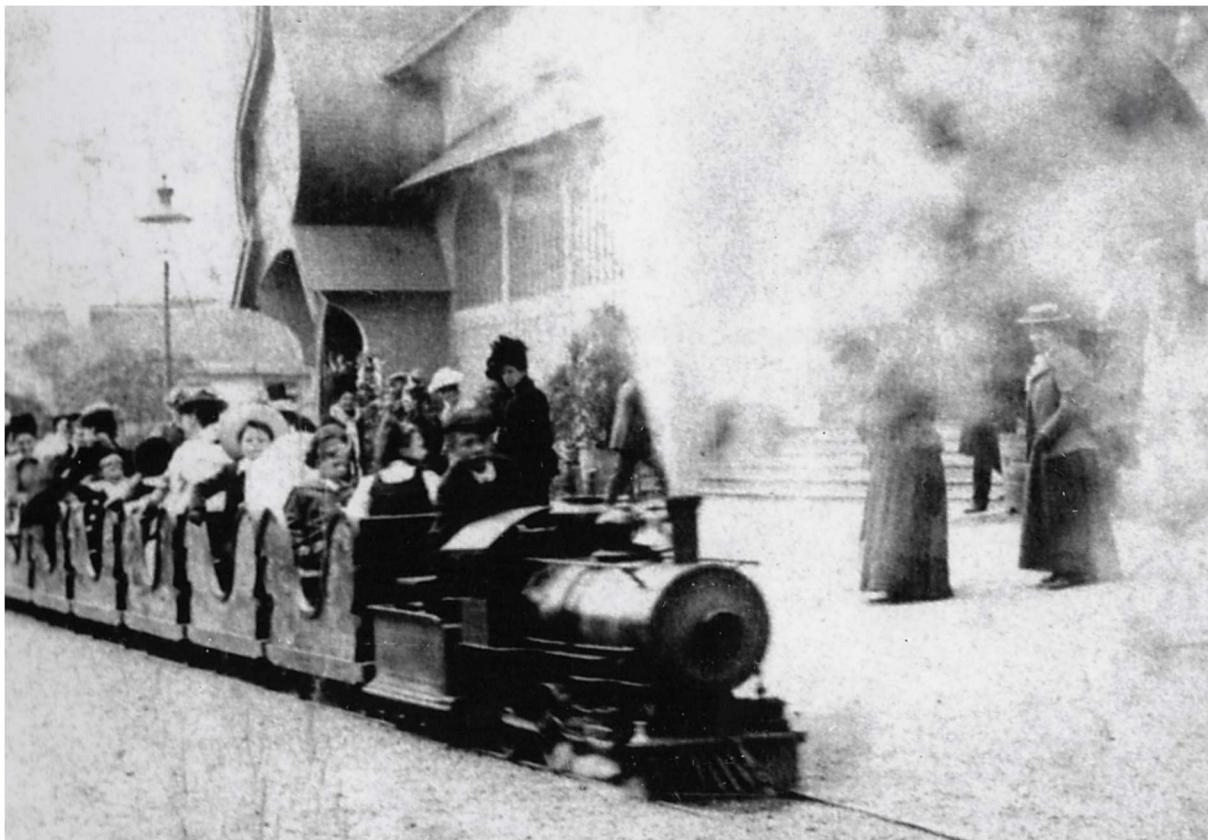
(Black & White. 04/05/01)

Next page upper: The exhibition has now opened. This view, looking east in the opposite direction to that above, through the remarkable pavilions of the Russian Village was taken before the railway was changed to an end-to-end run. The track would then be extended to run where the lady in the centre of the photograph with the hat and cane is walking. The Irish Cottages are out of sight immediately to the left. The original circular track can just be made out curving to the right and running out of the picture to the right by the side of the Russian Forestry Pavilion. It is on this curve the previous picture was taken.

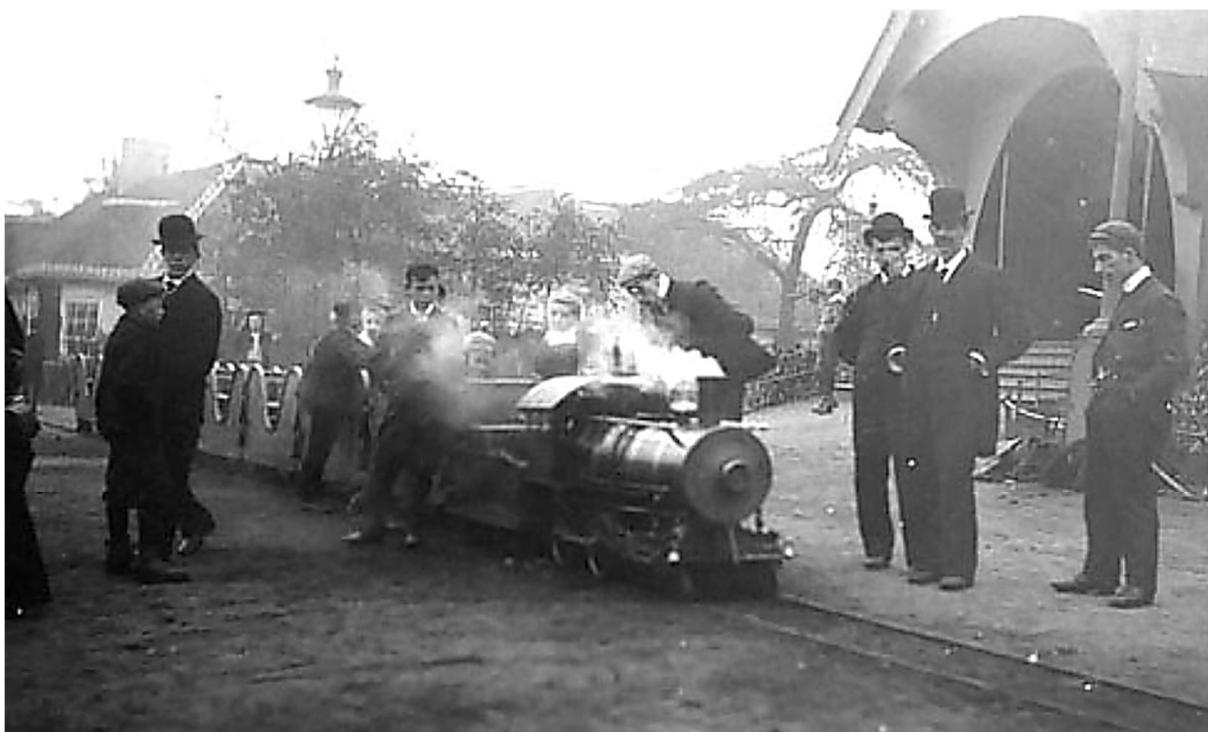
(Views of Glasgow International Exhibition 1901).



Compare this view to that on page 16. The track has now been altered to an end-to-end layout and extended to run in front of the Irish Cottages (out of view, right) and to the Stewart Memorial Fountain, which can be seen in the right background. The Cagney loco heads out with a full train. There is a babe in arms in the first coach and the driver looks very young!
(Author's Collection)



The train is passing one of the Russian Pavilions, the Irish Cottages are in the left background. The driver of the Cagney loco looks to be the same as in the view on page 17.
(Author's Collection)

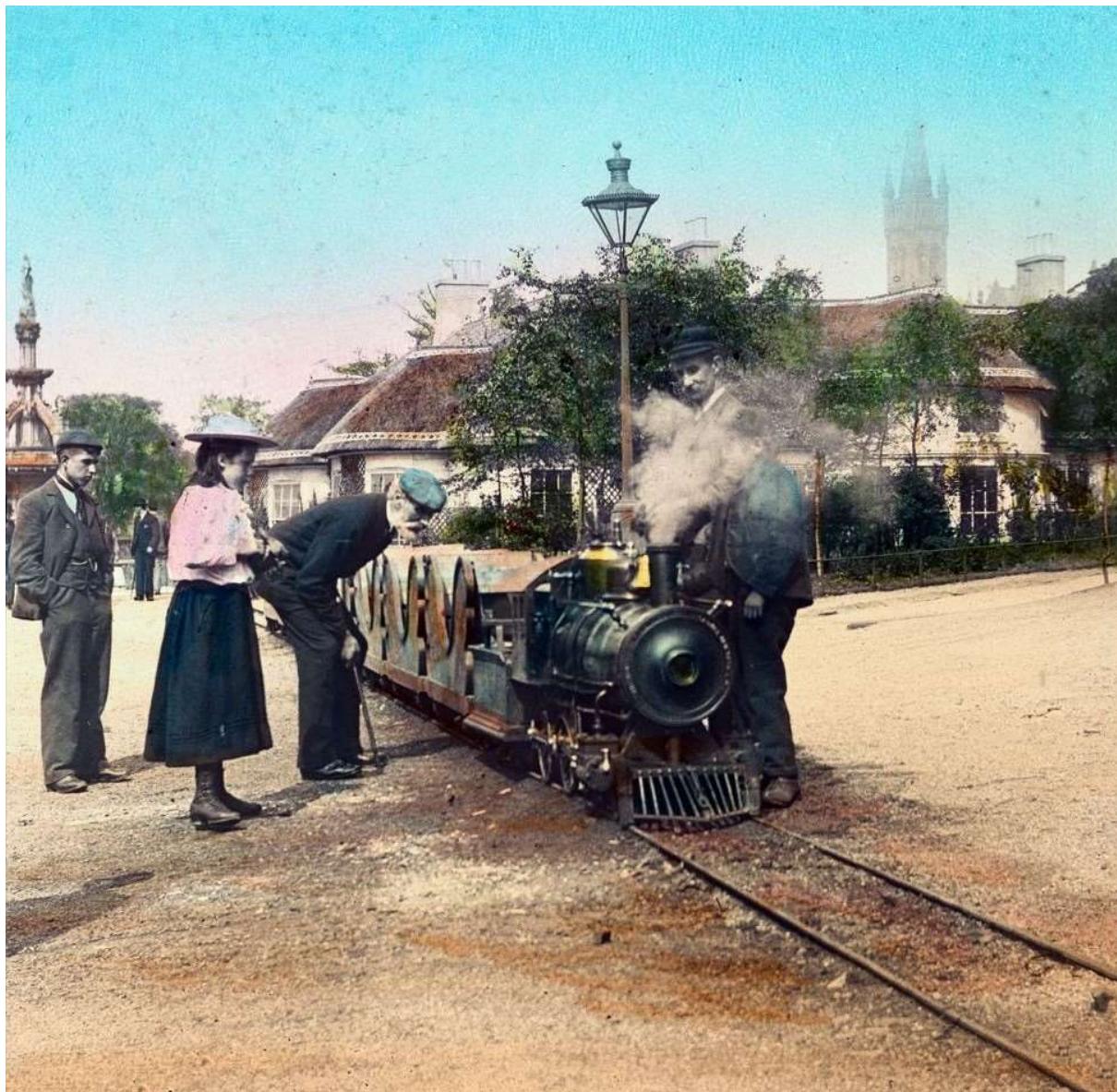


In this view the train is presumably waiting for passengers or to get steam up.
The locomotive has lost its cow-catcher, or pilot in American terminology.
(T. Boyd, courtesy D. Campbell)



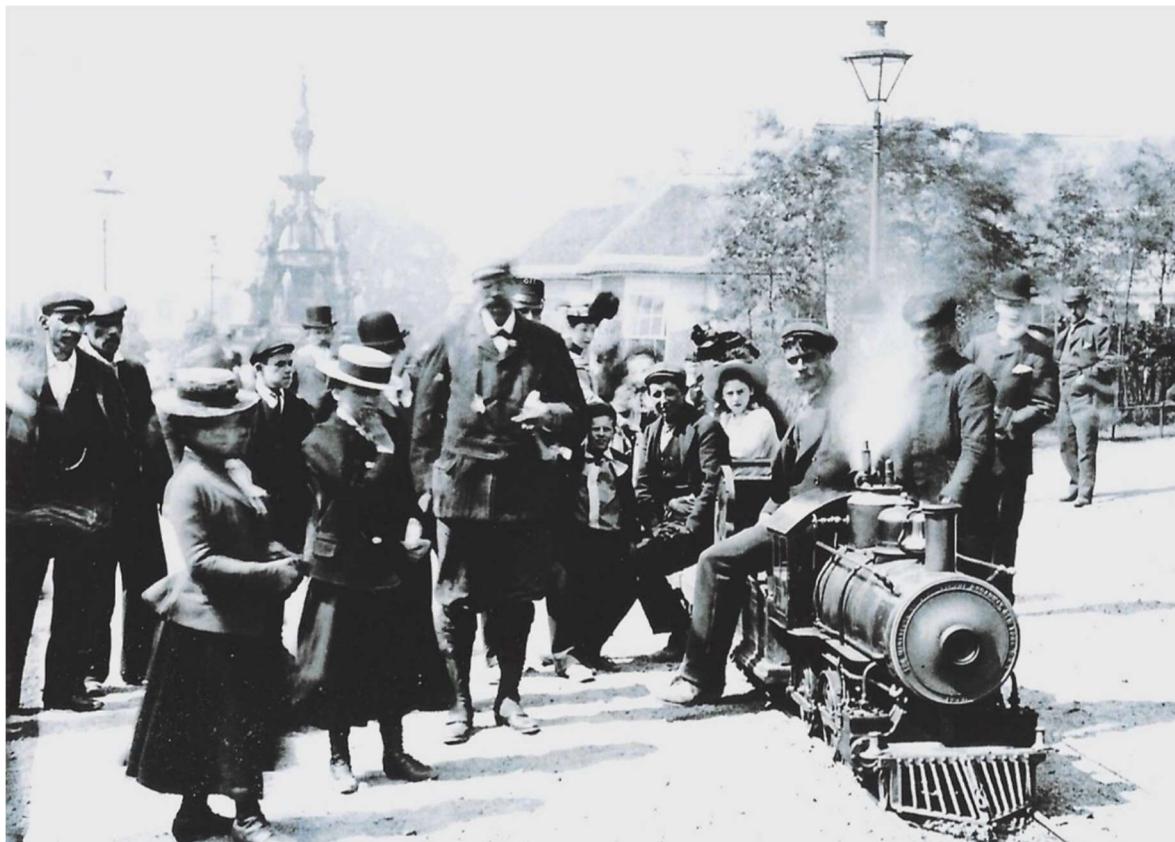
This view nicely shows the 4-wheel "Small Gold Medal Special Cars", each seating two passengers, with their ornate decorated sides. The train appears to be reversing, as the driver is looking back. The Cagney locomotive is working reasonably hard by the look of the exhaust. This is part of the original circuit, which was retained. Note how the rails are set into the gravel surface of the pathway. The passengers and onlookers are all dressed in the style of the time, with everyone sporting some form of headgear. The lady with her back to the driver in the first coach seems to have a particularly elaborate hat perched precariously on her head. The train is passing one of the impressive Russian Pavilions - referring to the upper picture on page 17 - it is the one just left of centre with the tall spire like structure.

(Author's Collection)



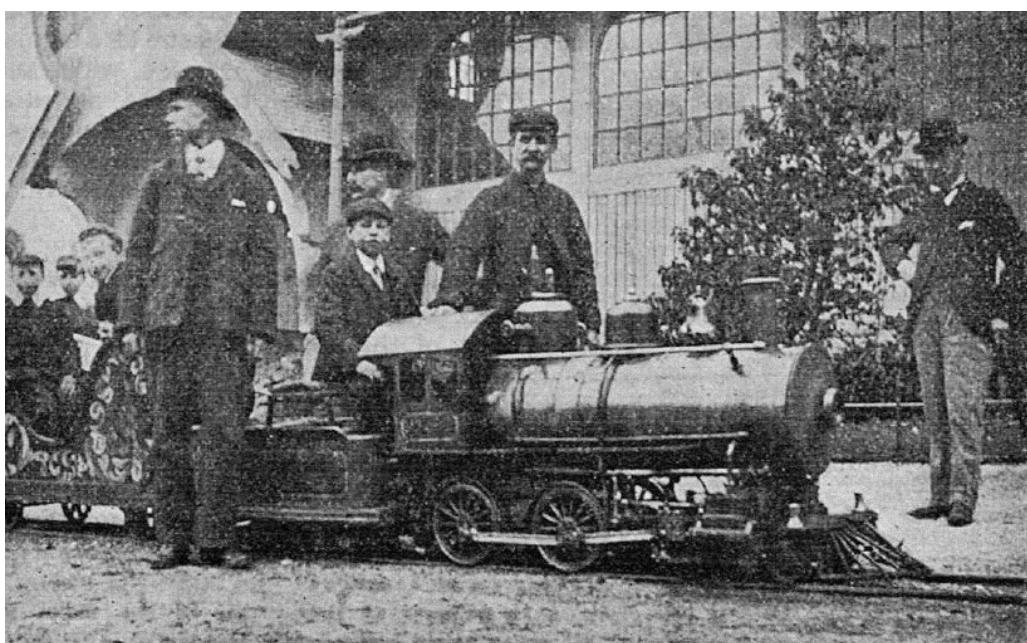
This glorious colourised photograph from a glass slide was acquired by the Author from ebay. The train is standing by the Irish Cottages, with the Stewart Memorial Fountain just visible on the left. Note the slope of the ground down to the left. At this point the train is standing directly over the Caledonian Railway's Glasgow Central Railway, which passed underneath in a long tunnel between Stobcross and Kelvinbridge stations. Prospective passengers are few, so perhaps this is early morning and the Cagney class D locomotive is getting up steam. However, one of the three onlookers appears to be interested in the Cagney, bending over to take a closer look. The driver is almost certainly the same gentleman who is driving the train on page 19 and the younger chap beside him, partly obscured by the smoke, may well be the driver in the pictures on pages 17 & 18 (upper). Note the locomotive's smokebox front does not have the four fixing studs, which were present on Cagneys built after 1902 - a useful identifying feature. Upper right, the University of Glasgow's 278 foot high tower looks over the scene.

(Author's Collection)



Passengers and a good crowd of onlookers pose for the camera. The train is in a similar position to the photograph on page 20. Is the large chap in the centre one of the "bulky bucolic gentlemen" the *Kirkintilloch Herald* of Wednesday 24th July was referring to? (See page 12). The date at the bottom of the smokebox ring can be read on the original print as 1900 - indicating the locomotive was probably new when sent to Glasgow.

(National Railway Museum)

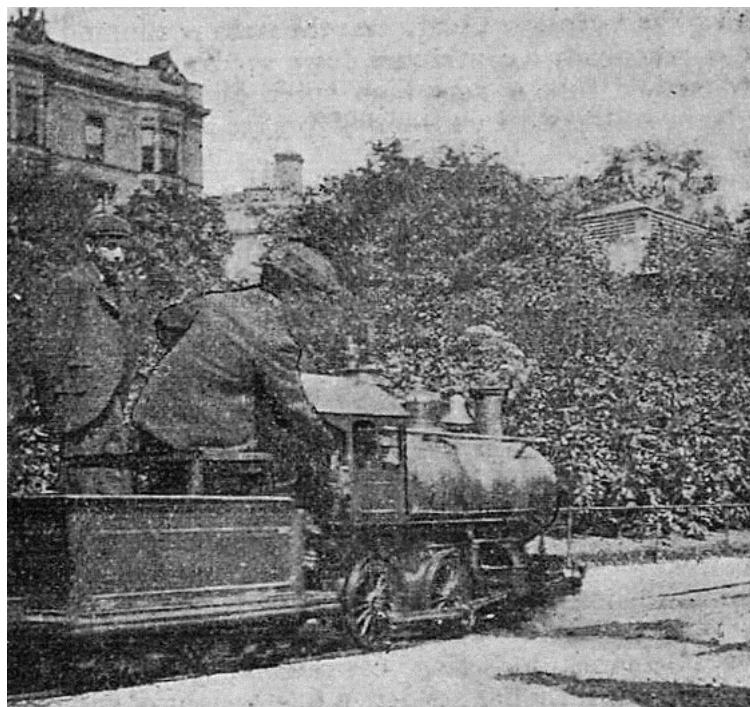


A side view of the Cagney locomotive outside one of the Russian Pavilions.
(*Model Engineer*. 15/10/01)



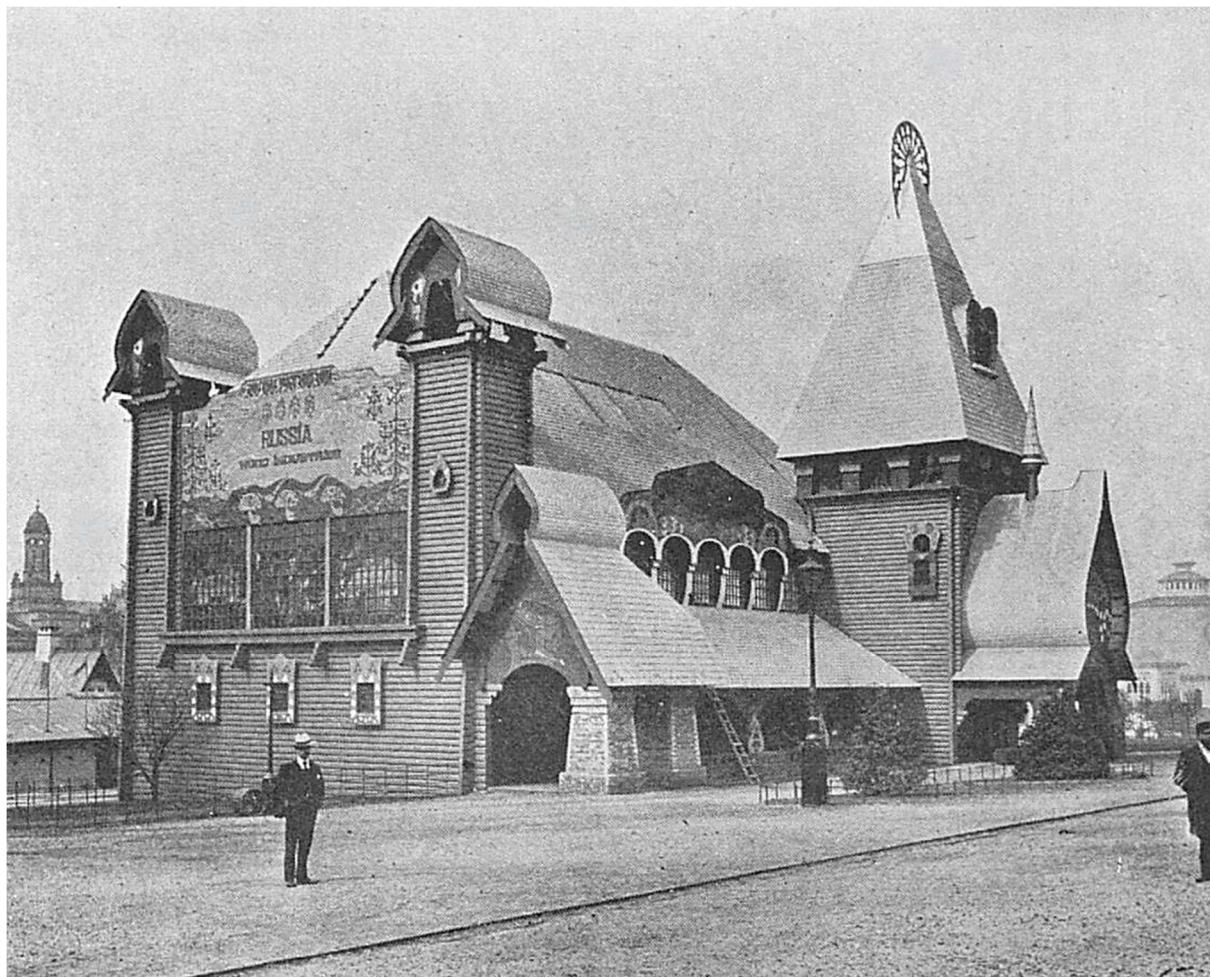
A small boy holds the hand of an adult and seems oblivious to the Cagney locomotive by his side. As with the picture on page 18 (lower), the locomotive has lost its cow-catcher (pilot).

(Heywood Society Journal No. 15)



Here we see a more unusual view of the Cagney locomotive, probably taken at the eastern end of the railway. This allows a view north east through to the houses on Park Gardens and Claremont Terrace, just outside the exhibition grounds.

(Model Engineer. 15/10/01)



The Russian Wood Industries Pavilion, with the track of the railway running past. Originally, when the railway was a circuit, the line also passed behind this Pavilion and in front of the buildings that formed part of the farm and which can be seen to the far left. Note how much lower the ground is there - the resulting gradients caused this section of the railway to be abandoned. The Grand Concert Hall can be seen in the background to the right.

(*The Sphere*. 26/10/01)



These drawings were titled "*Last Days at the Glasgow Exhibition*". The artist, Enoch Ward (1859-1922), has captured the chunky lines of the Cagney locomotive reasonably well, although he has added sleepers to the track, which are not visible in any of the photographs of the railway. However, the lower drawing nicely captures the train amongst the interested visitors to the exhibition, who had probably never seen a miniature railway before.

(Black & White. 19/10/01)

Summary

Opened: Saturday 11th May 1901
Closed: Saturday 9th November 1901
Layout & Length (Planned): Circular, 300 yards
Layout & Length (Actual): End-to-end, 160 yards

Locomotive (15" gauge)

4-4-0	Miniature Railroad Company (Cagney)	1900	American outline	1
1	From: new.			
	Removed from Exhibition site 13/11/1901.			
	To: Art & Industrial Exhibition, Wolverhampton by 23/06/1902.			

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British Library, St Pancras (Newspapers & Rare Books).

National Library of Scotland (Ordnance Survey maps).

**A HISTORY OF THE GLASGOW INTERNATIONAL EXHIBITION
MINIATURE RAILWAY**

A short history of 15" gauge railway at the 1901 exhibition

MINOR RAILWAY MINI HISTORIES - M7

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