



THE ROCKET

The Newsletter of the Robert Stephenson Trust - Winter 2017

"Rocket Man with Cousin Jacks" Book Launched

This new book about the great civil and mechanical engineer Robert Stephenson, George's only son, reveals for the first time the full account of his 3 years in the northern part of South America – mainly in Colombia – as a mining engineer between 1824 and 1827. He was only 20 when he set out for La Guayra (Venezuela) from Liverpool on a brig the Sir William Congreve.

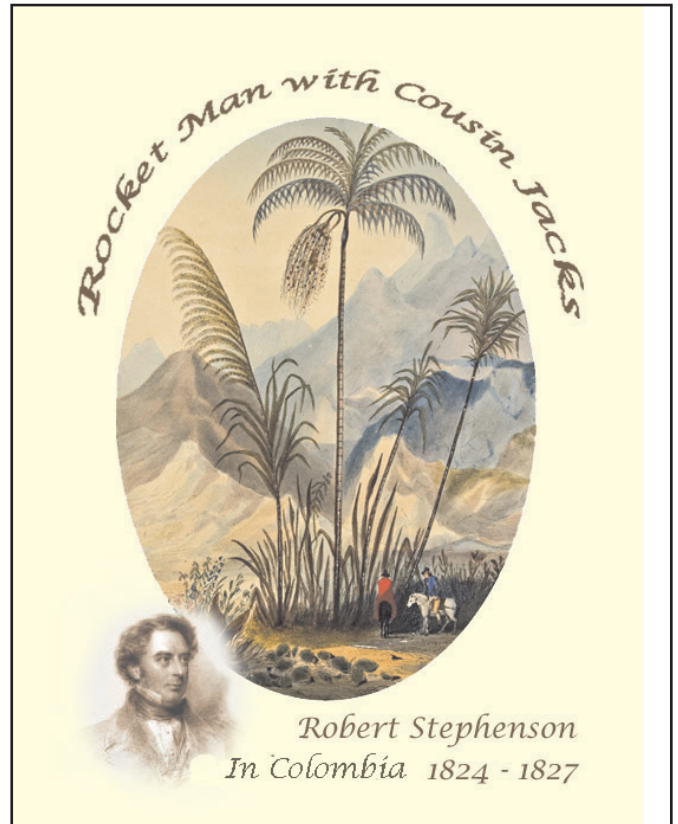
Bob Longridge, chairman of the Robert Stephenson Trust and author of the book said "It is based on 111 letters from him to his Richard Illingworth based in Bogotá. They have been in the collection of the Lilly Library, part of Indiana University in America, for years but no previous biographer had consulted them. The correspondence reveals an extraordinary series of challenges and frustrations with which he had to contend at a time when the country of Colombia was just recovering from a brutal war with the Spanish rulers – won by Simon Bolivar – and from a series of devastating earthquakes".

The Colombian Mining Association which employed Robert Stephenson had been created in 1824 as a speculative venture to exploit the silver mines left behind by the Spanish. The Association also recruited Cornish miners on 3 year contracts to do all the skilled work which it was assumed was beyond the capacity of the indigenous people. They are the 'Cousin Jacks' of the title. Stephenson sometimes expresses frustration with the drinking habits of the men, but reserves his greatest criticism for one of the Captains (the term for a supervisor) who caused him no end of difficulties.

His return journey – from Cartagena to New York – nearly ended in disaster as his boat, which had avoided being sunk in a tempest, ran aground at midnight and the passengers only just escaped drowning.

Once back in England he set to work to design an engine for the Rainhill Trials in Liverpool, set up to select the best steam engine for the new Manchester to Liverpool line which his father had engineered in his absence. This was named 'Rocket' and proved the winner. There followed a stream of radical engine designs at Robert Stephenson & Co., Robert's factory in Newcastle, such as The Northumbrian (1830), the famous Planet (later in 1830), and finally the Patentee in 1833.

The book includes substantial extracts from the letters, a selection of the writings of Stephenson's companion



Charles Empson who describes the life they lived at a time when the land was covered in ancient trees and still had a huge variety of wildlife such as monkeys and parrots, and a chapter on the life of Cornish families at that period.

It is illustrated with reproductions of a series of Empson's beautiful contemporary watercolours plus photographs taken by the author on a recent visit to search for remains of the principal mine where Stephenson was based, near the town of Mariquitá. The book is published by the Robert Stephenson Trust which is based at the North of England Institute of Mining and Mechanical Engineering. It is on sale there or from the Trust's website: robertstephensontrust.com or use the order form on back page.

Bob Longridge is three times great grandson of Michael Longridge, manager of the Bedlington Iron Company and a founding partner, in 1823, of Robert and Company.



THE ROCKET



Art and history combine at Head of Steam Exhibition.

An eighteen-year-old girl's journey to Egypt with Robert Stephenson on board his yacht 'Titania' in 1858 is the inspiration behind Newcastle-based artist Cath Campbell's exhibition.

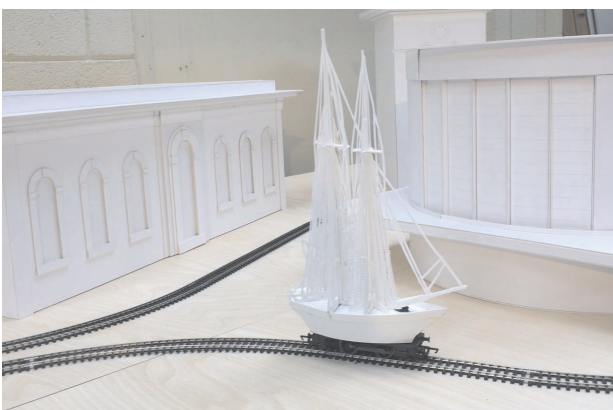
The exhibition featured architectural, replica models of train stations depicting those found in cities teenager Elizabeth Bidder visited during the epic voyage from Southampton to Alexandria, Egypt. Artist, Cath Campbell, said: "I've always been fascinated by travel and how we access different parts of the world. "I wanted to create a piece of work for Head of Steam – Darlington Railway Museum that reflected its history, heritage and relationship with Robert Stephenson. I was introduced to Elizabeth's diary detailing her voyage on board the 'Titania' and I thought it would be fascinating to celebrate some of the railway stations in the cities she visited on her journey."



Mayor and Mayoress of Darlington Cllrs Brian and Doris Jones with Artist Cath Campbell

The Elizabeth Bidder Diary, published as an electronic book in 2008 by The Robert Stephenson Trust, provides a first-hand account of the eighteen-year-old's journey in which she shares a vivid story of her trip with the famous railway engineer, including tales of the cities and countries visited along the way.

The ebook can be purchased online from Amazon or printed copies priced £10 can be obtained from the trust by email: rstrust@robertstephensontrust.com



JOSIAH LATIMER CLARK, F.R.S., MICE.

Josiah Latimer Clark was born in Great Marlow, Buckinghamshire, and was younger brother to Edwin Clark (1814–1894), a Civil Engineer and inventor of the Clark hydraulic lift graving dock. Latimer Clark studied chemistry at an early age. His first connection with technical work was in the chemical manufacturing industry in a large Dublin establishment. However, in 1848 Clark began working in his elder brother's civil engineering practice and became assistant engineer at the Menai Strait bridge. Two years later, when his brother was appointed Engineer to the Electric Telegraph Company, he again acted as his assistant, and subsequently succeeded him as Chief Engineer. In 1854, he took out a patent "for conveying letters or parcels between places by the pressure of air and vacuum," and later, in 1863, was concerned in the construction, by the London Pneumatic Despatch Company, of a tube between the London North-West District post office and Euston station, London.



About the same period he was engaged in experimental researches on the propagation of the electric current in submarine cables, on which he published a pamphlet in 1855, and in 1859 he was a member of the committee that was appointed by the government to consider the numerous failures of submarine cable enterprises.

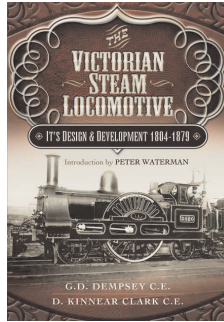
Latimer Clark paid much attention to the subject of electrical measurement, and besides designing various improvements in method and apparatus and inventing the Clark standard cell, he took a leading part in the movement for the systematization of electrical standards, which was inaugurated by the paper which he and Sir CT Bright read on the question before the British Association in 1861. With Bright also he devised improvements in the insulation of submarine cables. In the later part of his life he was a member of several firms engaged in laying submarine cables, in manufacturing electrical appliances, and in hydraulic engineering. Clark was one of the first authors to attach the metric prefixes mega- and micro- to units other than the metre.

Clark married Margaret Helen Preece (Sir William Preece's sister) in 1854. They had two children. He later divorced her for good cause in 1861. Clark died in London on 30 October 1898.



BOOK REVIEW

The Victorian Steam Locomotive - Its Design & Development 1804 – 1879 by G.D.Dempsey C.E.



When I collected the book I said that it felt right and looked right. Having read it, it is right.

Although it has been abridged by D K Clark for this 2015 publication/edition the original prose and the many illustrations, mainly drawings (the photographs were added by D K Clark), add to the interest.

The book is divided into two parts, four sections and twenty six chapters.

Part I is a history to 1879 of locomotives and descriptions of some and their parts. Part II, Section I is a more detailed description of the various components and illustrations of representative locomotives from 'Puffing Billy' of 1813 to 'Pevensey', a modern locomotive when the book was written. Both 'Puffing Billy' and a sister to 'Pevensey' – 'Gladstone' are in the National Railway Museum in York. The only comment is that the caption for 'Rocket' describes it as 2-2-0 tender locomotive but it is 0-2-2 wheel arrangement.

Part II, Section II is more descriptions along with locomotive diagrams (basic outline drawings) of a range of 'English types of Locomotives'. These go into great detail including information on various boiler and firebox styles and the evolution of the express locomotive. There is a long description of the Stirling 8' Singles of the Great Northern Railway including what appears to be direct quotations from the designer, Patrick Stirling. He compared the locomotive with one large driving wheel with one with four coupled driving

wheels – the boiler and cylinders being identical though the four coupled one has smaller diameter, 6'6", driving wheels. The single was faster on trains of the day but towards the end of the century the newer, heavier coaches made coupled locomotives with more of the locomotives' weight available for adhesion the order of the day.

Fig 44 is a diagram of a Fairlie locomotive with a single boiler and 45 a double Fairlie of the type still working on the Festiniog Railway in North Wales. On this locomotive there are two boilers joined by one firebox on a rigid frame with the wheels and cylinders on separate pivoted bogies.

Section III is a comprehensive account, with technical drawings, dimensions, weights, steam pressure and various calculations of a type of locomotive constructed by Messrs Beyer Peacock & Co of Manchester for the South-Eastern Railway of Portugal. The layout is still that of Robert Stephenson's 'Patentee' design of 1838 though bigger and more powerful. This section could be used to build a replica – any offers?

The final section is on wind and rail resistance of trains from data available in 1879.

A very good read for anyone interested in the history and development of steam locomotives up to 1879 and as Pete Waterman writes in his forward – "This book plots the development of the Steam Locomotive and is a book I recommend to all who love them or wish to work on their preservation. A fascinating read"

Published by Pen & Sword Transport, 47, Church Street, Barnsley, S70 2AS, Published 2015,
ISBN 978 1 47382 323 5

Review by D.Crockett.

SINCE 1859 **THE ORIGINAL**
ENGINEERING TESTING, INSPECTION & CONSULTANCY

 **BRITISH ENGINEERING SERVICES**
ESTD 1859

Last August the Mining Institute provided an unexpected opportunity to link an engineering boiler inspection & insurance company British Engineering Services based in Manchester with Bob Longridge. Interviews were being held in Newcastle for engineering staff and one of the team, Barry Hall, Unit Leader, asked Simon Brooks if the Institute had any archive material relating to BES's predecessor 'British Engine' and its founder R.B.Longridge. Simon was able to show the connection with Robert Stephenson and RBL's father Michael; and then mentioned that Bob was continuing the family's links. This led to contact being made between Barry & Bob. Some weeks later more interviews were held and it coincided with the launch of 'Rocket Man with Cousin Jacks'



L to R Barry Hall, Unit Leader, British Engineering Services, Bob Longridge, Chairman Robert Stephenson Trust and Mike Brown, Technical Manager, Pressure Discipline, for BES

THE ROCKET



Robert Stephenson's Writing Box



For Robert Stephenson, it was the laptop of his day. His leather-clad writing box would have enabled Robert, who journeyed extensively across the UK and abroad on a relentless series of railway construction projects, to work as he travelled and when he arrived at his destination.

The case, with cut glass inkwell with a silver mount dated 1844, was recently put into Auction by Viz co-founder and railway enthusiast Chris Donald with an estimate of £400-£600 on its value.



Chris Donald, a keen railway collector who is currently writing a book about train spotting and obsession, found the writing case at a railwayana auction in Sheffield in the 1990s. He had gone to watch the auction and to bid for an engine name plate.

"All the people there were train enthusiasts rather than history enthusiasts – they were paying £30,000 for a piece of brass, but they weren't interested in this case that had been carried and used by the bloke that had built all the railways and the bridges. "I got it for the reserve. I couldn't quite believe it."

The box has a lacquered brass handle and opens up to reveal a lockable section and the inkwell. The box was sold by "Edwards, Manufacturer of Writing & Dressing Cases to Her Majesty, 21 Kings Street, Bloomsbury, London" and has "Robert Stephenson, 34 Gloucester Square, Hyde Park, London" inscribed on the top and on an outer brass plaque.

Chris Donald, who describes himself as a "hoarder" who is downsizing, rediscovered the case inside a cardboard box while he was sorting through his model railway collection. He said: "I'd forgotten I had it. After saving it from auction where it was not being appreciated, I didn't appreciate it myself. It had literally been kept in a box on top of a cupboard."

Pickersgill painting of George Stephenson

The oil painting dates from 1845 and was featured on the BBC Antiques Roadshow. Louise Durose representing MAN Diesel & Turbo's UK Headquarters in Hazel Grove asked advice and information from art expert Philip Mould on behalf of the BBC.

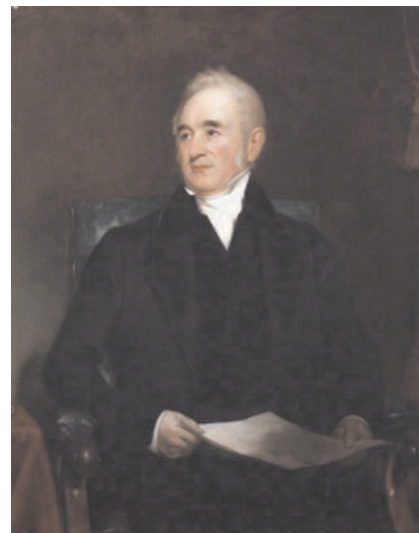


Louise Durose with Phillip Mould

For many years the painting hung in the Boardroom at Ruston Diesels' Vulcan Works in Newton-le-Willows. When Ruston Diesels became part of the MAN Group in 2000, the painting remained within the company.

In 1830, engineer and merchant Charles Tayleur established Vulcan Foundry at the south end of Newton-le-Willows, occupying 1,350 sq m of a 1.4 hectare yard. The foundry produced all kinds of railway ironwork and supplied the Liverpool & Manchester Railway. In June 1832 Robert Stephenson became a partner in the works but resigned in 1836 owing to the heavy workload of his other railway commitments.

The painting of George Stephenson is attributed to the renowned Victorian artist Henry William Pickersgill which Phillip Mould valued at £25,000.



The National Portrait Gallery also owns a similar painting of George Stephenson by Henry William Pickersgill, circa 1845



Builders of Locomotives to the World's Railways: Cataloguing the Private Manufacturers' Collections

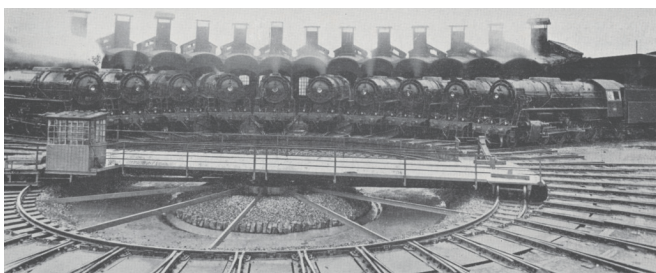
Tania Parker a Search Engine assistant on the National Railway Museum's Collections & Research team has in recent months been cataloguing the National Railway Museum's private manufacturers' archive collections. All of the companies featured in these collections exported a phenomenal amount of locomotives, components and equipment across the globe during the nineteenth to mid-twentieth centuries.

The railway equipment was manufactured in railway works across the Britain such as Preston, Gloucester and Newton-le-Willows. Once the locomotives were completed and packed up for shipping they made their way to the docks to set sail bound for foreign shores.



A Robert Stephenson and Hawthorns brochure depicts locomotives lined up ready for their voyage to India on a ship. [Ref: HL/5/5]

English Electric was an especially prolific exporter and their photograph albums take you on an international rail journey starting from the Sao Paulo Railway in Brazil terminating at the Ome Tetsudo Railway in Japan, with such station stops as the Cape Town Suburban Railway and Bombay, Baroda and Central India Railway.



Liberation class locomotives outside roundhouse. [Ref: VUL/3/7]

The photos are copyright of NRM and various collections are now live on the new archives catalogue and can be viewed in person by visiting the Search Engine.

175th Anniversary of Summit Tunnel

Tuesday 1st March 2016 marked the 175th anniversary of Summit Tunnel. One of the oldest railway tunnels in the world. At its date of completion, the Summit Tunnel was also known as one of the longest railway tunnels in Britain. Built between 1838 and 1841 by the Manchester and Leeds Railway beneath the Pennines, the tunnel is located between Littleborough and Walsden and created a vital gateway between Manchester and Leeds.

The tunnel was mined by hand through shale, coal and sandstone and was lined with six courses of bricks – using over 23 million handmade bricks in all – to form the horseshoe shape. This was then aligned by drilling fourteen vertical shafts to provide survey points on the hillside above. After the tunnel was completed two shafts were closed and the remaining twelve were used as blast relief shafts to vent steam from the locomotives that passed through.

Engineer Thomas Gooch had worked with both George and Robert Stephenson on various railway schemes since 1825. Between spring 1835 and 1844, he was the 'acting engineer' to the Manchester and Leeds Railway Company on George Stephenson's behalf. Work began at Summit Tunnel in September 1837 with Gooch's brother Daniel joining the team for a short time. Work commenced on the tunnel in January 1838 at a price of £107,800. Despite this price tag, the overall cost rose to £251,000 and construction proceeded at a slow pace until the contractors were replaced in March 1839 when tunnelling went ahead at about 150 yards a month. The total number of labourers varied between 800 and 1,200 at different times with some being brought in from as far away as North Shields. The last brick was laid on 9th December 1840.

Despite its age, Summit Tunnel has been continuously used since it opened over 175 years ago.



THE ROCKET



George Hennet

The Trust has received the following enquiry and would be interested to hear of anyones knowlege of George Stephenson's connections with George Hennet.

"After the publication of the entry in Vol.2 of ICE's Biographical Dictionary, I decided to continue seeking information about George Hennet's life and career. Although freelance, Hennet was a competent surveyor and contractor which kept him busy from the 1820s until his death in 1857. So far I can place his involvement in twenty-two railway undertakings plus other contracts such as the caissons and Swivel Bridge at Bristol Docks plus his attempt to rescue the Clifton Suspension Bridge project in 1851.

The downside is that he appears to have left no personal papers and only achieves a footnote (if that) in railway histories. The primary sources have proved marginally better but I'm still filling in gaps in schemes not associated with I.K. Brunel. With regard to the Stephensons, Hennet would have been known to George as he became an assistant to C.B.Vignoles (c.1825 - 1827) in the new route south of Stephenson's original line for the Liverpool and Manchester. Unfortunately John Vignoles has identified critical archival gaps which would have confirmed this.

Hennet's re-survey of the London to Birmingham with Robert Stephenson in 1832 has been acquired by ICE for which he was allegedly paid £2,500. I have a printed abstract of evidence for his borings on the route to the House of Lords Committee in June 1832 and, two years later, a transcription of his interrogation by the HoL Committee over the London to Southampton line. With F. Giles (but under the Stephensons) Hennet surveyed a line to join the L&S in 1838 and to connect with Portsmouth.



The possibility of a family link between the Hennets and the Stephensons has come about because of my recent discovery of a second miniature portrait by his sister, Mary Hamilton. The miniture held in the Science Museum Collections was exhibited at the Royal

Academy in 1836. The other miniature, with GS's name written on the back, is owned by a family descended from a marriage with Hennet's other sister, Ernestine. I am confident of the artist as there are other miniatures in existence and the likely date is too late to be attributed to Hennet's father, Anthony, who also painted miniatures but who died in 1834."

signed.....BJM

Science Museum Collections

Portrait of George Stephenson

Collection: SCM - Art

Object Name: painting; portrait

Maker: Hamilton, Mary

Date Made: 1830-1836

Materials: watercolour on ivory

Measurements: frame: 170 x 145 x 15 mm

Description: Miniature portrait of George Stephenson (1781-1848) by Mrs. Mary F. Hamilton. Watercolour on ivory. Sight size 13x10.5cm in mount, in wood frame 17x14.5x1.5cm. Signed by artist on edge of print, aquatint by Pyall of Sankey Viaduct (Liverpool & Manchester Railway opened 1830), depicted in picture. Sitter TQL seated slightly to R holding scrolled prints, another, books and a miner's safety lamp on table L beside him. Inscribed on gilt mount as Exhibited at the Royal Academy 1836 [listed, cat. 735]. Object Number: 1952-207

Catalogue entry



Garnkirk and Glasgow Railway

Many thanks and apologies to readers spotted the picture error which accompanied the item on the Garnkirk and Glasgow Railway in the last edition of 'Rocket' The picture which should have appeared is reproduced below together with appropriate caption.



D O Hill's view of trains passing on the embankment at Germiston on the day of the opening of the Garnkirk & Glasgow Railway. This embankment at Germiston was three-quarters of a mile long and 45 feet high. The picture looks west towards the massed chimneys at Charles Tennant & Co' St Rollox chemical works, and the masts of the boats on the canal at Port Dundas can be seen in the far distance on the hillside to the right of the chimneys.

Copyright of Glasgow City Council, Mitchell Library, Glasgow Collection.



PRODUCTS OF THE WORKS

The Twizell

Built 125 years ago by Robert Stephenson and Co., The photo shows The Twizell standing at the Marley Hill Sheds of the Tanfield Railway.



The black locomotive, lined in red, is one of the highlights at the Tanfield Railway run by a dedicated team of volunteers. The six-wheeled workhorse may have earned her retirement a long time ago but there is still a lot of work to do for the hard-working pensioner.

Malcolm Sunter, in charge of development at the railway, said Twizell has won a place in the hearts of all volunteers. He said: "The Twizell is one of three operational locomotives which takes passengers up and down the line. "It spent its working life at Beamish Colliery from the late 1800s right up to the 1950s. "Twizell was a hard worker taking coal to Chester-le-Street and then linking to Derwent Staiths and Jarrow". "Beamish Museum inherited it but they did not know what to do with it and passed it to us on loan".

For enthusiasts the Twizell is a 0-6-0T with 17x24 inch inside cylinders, 4ft diameter wheels, weighing 41 tons. The locomotive underwent several different changes of ownership and in 1947 was installed with a new boiler when ownership passed to the National Coal Board and was a workhorse but known to need frequent repairs and in her later years was notorious for being prone to derailment. In 1961 it was involved in a workshop accident when runaway wagons pushed it out of the shed walls.

On being moved to Beamish Museum Twizell underwent a refurbishment which was completed by Tanfield Railway whilst on the loan to the organisation.

Agecroft Locos 1, 2 and 3

Three Agecroft standard outside cylinder locomotives were built by Robert Stephenson & Hawthorns in the 1950's for the Salford Corporation Electricity Department for use at Agecroft Power Station near Manchester where they shunted coal wagons from the power station to the coal tippers.

The power station eventually passed into CEBG ownership and the engines became redundant when a conveyor belt was constructed to bring the coal supplies in directly from Agecroft colliery. When the surplus locos were offered for sale, AG2 was purchased and moved to Southport by road on 14th December 1982. Following intensive restoration, the loco spent much of the 1990s masquerading as 'Thomas' at Southport, and also appearing at the Preston Guild celebrations of 1992.



Robert Stephenson & Hawthorns 0-4-0ST Agecroft No 1 7416, at MOSI, Manchester on 23rd July 2011

Agecroft No3 another of the three 0-4-0 steam shunter used at Agecroft Colliery and subsequently passed around several heritages and ended up at Whitwell and Reepham Station M&GNJR. In 2015 three volunteers known as 'The Thursday Gang' were asked to take on the project of restoring Agecroft No3 and this project is ongoing.

The Agecroft power stations were three coal-fired power stations, which were situated between the eastern bank of the Manchester, Bolton and Bury Canal and the western bank of the River Irwell at Agecroft. The stations operated between 1925 and 1993.



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Those Friends who are taxpayers and have not yet signed a Gift Aid Declaration, are asked to consider doing so, to enable the Trust to reclaim tax.

A form is reproduced below or can be printed by visiting :

http://www.robertstephensontrust.com/giftaid.htm

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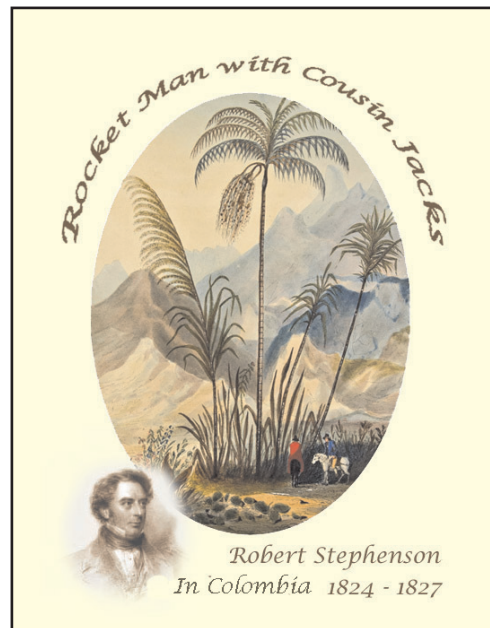
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Date:

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ROCKET MAN WITH COUSIN JACKS ROBERT STEPHENSON IN COLOMBIA, 1824 - 1827



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