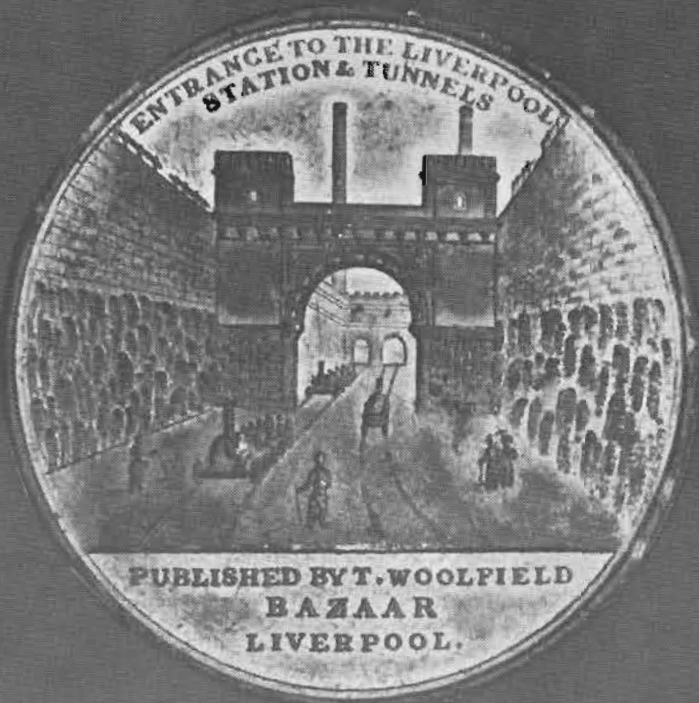


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EDITOR: Fred F. Angus
CO-EDITOR: M. Peter Murphy
OFFICIAL CARTOGRAPHER: William A.
Germaniuk
LAYOUT: Michel Paulet

CALGARY & SOUTH WESTERN DIVISION
60-6100 4th Ave. NE
Calgary, Alberta T2A 5Z8

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FRONT COVER

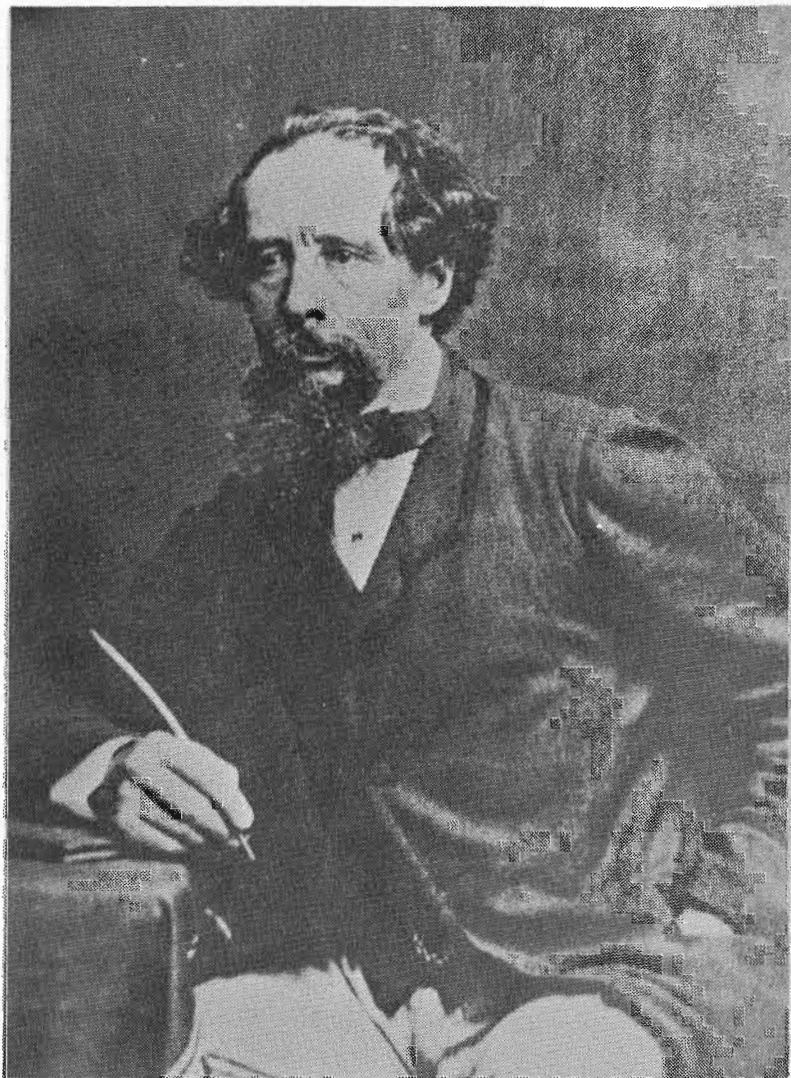
STEPHENSON'S FAMOUS LOCOMOTIVE "ROCKET" as it appeared at the Rainhill trials in October 1829. This painting was used on the cover of the souvenir booklet at the time of the "Rocket 150" celebrations in 1980.

INSIDE FRONT COVER

A medal struck in white metal in 1830 to commemorate the opening of the Liverpool and Manchester Railway. One side depicts the Sankey Viaduct, while the other shows the "Noorish Arch" at Edgehill near Liverpool. Interestingly the medal contains three errors (Sankey Viaduct is shown with Gothic arches, the trains are shown running on the right, and the railway is shown as "railroad"). These medals were sold to interested persons at the opening ceremony.

Charles Dickens- chronicler of railways

S. S. WORTHEN



CHARLES DICKENS (1812 - 1870) as he appeared in the 1860's in the latter part of his career.

Without any doubt, Charles Dickens was the chronicler par excellence of England and the life of the English people during the middle years of the nineteenth century. He fathered the white Christmas and raised to the level of immortality the English stagecoach. His "Christmas" at Dingley Dell, with the huge cod-fish and half a dozen barrels of oysters being stowed in the coach boot, hot brandy and water for all, Sam Weller jumping up behind, the Pickwickians pulling their greatcoats around their legs and their shawls around their noses, "and away they go", permanently delineated this form of travel to all eternity.



MR. BOB SAWYER ATOP THE COACH while Mr. Pickwick looks up from the inside of the coach. An illustration from the first edition of *The Pickwick Papers*, written by Dickens and printed in 1837.

This was in 1836, and Charles Dickens was barely twenty four years old. Stage-coaches and coaching inns had been the hallmarks of the late Georgian world in which he had been brought up. This was the England of Cobbett, not yet stifled, smothered and suffocated in what Edmund Wilson has called the "industrial-commercial civilization" which is our "today".

The "Old England" which Dickens knew and loved was devotedly described in "Pickwick Papers" (1836), "Oliver Twist" (1838), "Nicholas Nickleby" (1839), "The Old Curiosity Shop" (1841). However, in "Martin Chuzzlewit" (1844), the first overtone of change was perceptible when Mrs. Gamp inveighs against steam engines as liable to interfere with her "profession" by potentiating premature childbirths.



EIGHT PASSENGERS, THE DRIVER AND GUARD OUTSIDE, and four more passengers inside. A coach drawn by four horses en route to Cambridge in the 1820's.

Notwithstanding this brief reference, "David Copperfield" (1850) records events in an unquestionably stagecoach era, and there is only one reference to the coming of the railway in "Bleak House" (1853), and none at all in "Great Expectations" (1861). But by now there should have been. Even as early as 1837 it might have appeared strange that Mr. Pickwick's visit to Bath could overlook a young man called Isambard Kingdom Brunel who had already planned a railway from Bristol to London. But we must not forget that the action of the story is set in the year 1827 when railways were just beginning and stagecoaches were all-supreme. By the time Pickwick was published in 1836 - 37 however, the situation had changed and the handwriting was on the stable wall. Perhaps Dickens had that in mind when he described so vividly the "graveyard" of

old outdated mail coaches slowly decaying, and whose only remaining activity was making ghostly runs by night carrying "dead letters of course". By the 1840's the sight of scrap yards full of old stagecoaches must have been as common as those of steam locomotives more than a century later. The old system had been superceded by a new technology, and Mr. Weller senior could have contemplated resting from his labours and hanging up his whip for good and all when, in 1841, the last mail coach ran on the Bath road.

How a man may journey

from any notable towne in England,
to the Citie of London.

The way from Douer to
London.

From Douer to Cantobery	xlj.mile
From Cantobery to Sitttingborne	xlj.m.
From Sitttingborne to Rochester	viij.mile
From Rochester to Grauesende	v.mile
From Grauesende to Watfozde	vi.mile
From Watfozde to London	xlj.mile

The way from Bristowe to
London.

From Bristow to Parfield	x.mile
From Parfield to Chipnam	x.mile
From Chipnam to Parleborough	xv.mile
From Parleborough to Hungerford	viij.mile
From Hungerford to Newbury	vij.mile
From Newbury to Reading	xv.mile
From Reading to Walsdenhead	x.mile
From Walsdenhead to Colboke	vij.mile
From Colboke to London	xv.mile

The way from Barwike to Yorke, and
so to London.

From Barwike to Belfozde	xlj.mile
From Belfozde to Antwicke	xlj.mile
From Antwicke to Popple	xlj.mile
From Popple to Newcastell	xlj.mile
From Newcastell to Durham	xlj.mile
From Durham to Darlington	xlj.mile
From Darlington to Posthalerto	xlj.mile
From Posthalerto to Toplice	viij.mile
From Toplice to Popke	xv.mile
From Popke to Ladeaffer	viij.mile
From Ladeaffer to Wentbridge	xlj.mile
From Wentbridge to Dancaster	viij.mile
From Dancaster to Tutfozde	xv.mile
From Tutfozde to Newwarke	x.mile
From Newwarke to Grantham	x.mile
From Grantham to Stanfozde	xv.mile
From Stanfozde to Stilton	xlj.mile
From Stilton to Huntington	x.mile
From Huntington to Kollton	xv.mile
From Kollton to Ware	xlj.mile
From Ware to Waltham	viij.mile
From Waltham to London	xlj.mile

NEWCASTLE, DURHAM, DARLINGTON, DONCASTER, GRANTHAM. These names played a great part in railway history, but this is how they appeared in 1577 in a road guide printed that year in the reign of the first Elizabeth. The impact of the railway revolution is well shown by the similarity of travel in Dickens' youth to that of the time of Shakespeare! In the sixteenth century public transport was provided by passenger-carrying freight wagons, soon to be supplimented by the first stage coaches. The wagons could cover about two stages per day, so this is one of the earliest timetables. The miles given are the old English miles of about 6600 feet, so the distances in modern miles are greater than shown. London to York (200 miles) took 6½ days; not much faster than walking, and certainly slower than riding horseback. Service was speeded up considerably in the next 250 years, especially after mail coaches appeared in 1784. Nevertheless the traveller of 1820 would have felt more closely akin to his ancestor of 1577 than to his descendant of 1860.

In 1842 Charles Dickens travelled to North America, and his "American Notes" contain numerous reference to rail travel in the U.S. and even one in Canada, since by this time the railway was replacing stagecoach and canal traffic in America as well as England. Near the end of his trip, on May 30 1842, Dickens en route from Montreal to New York, rode from Laprairie to St. Johns on the Champlain and St. Lawrence Rail Road which had then been open less than six years. It is entirely possible that the motive power that day may have been Canada's pioneer locomotive "Dorchester".

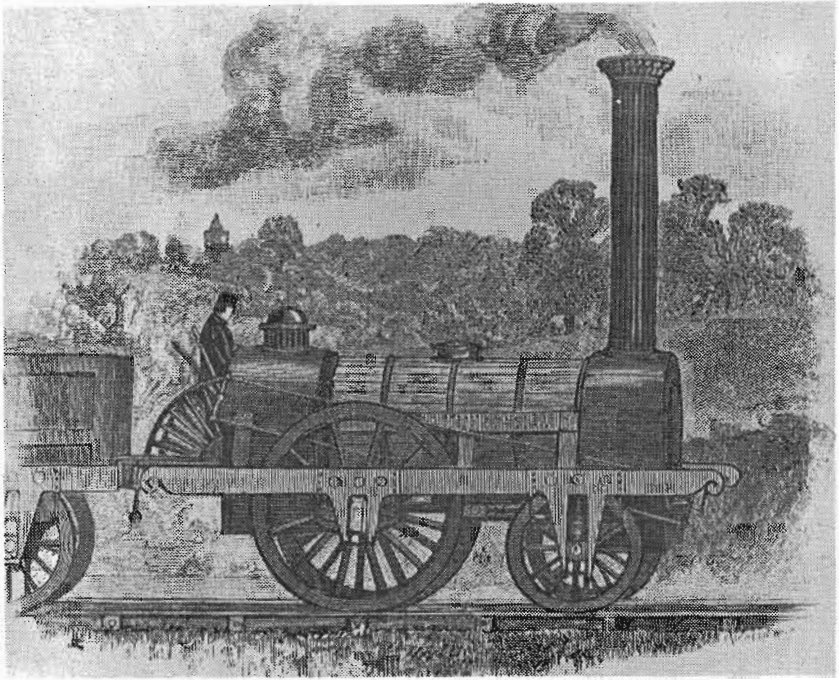
The great Railway Mania in Britain in 1845 - 46 and George Hudson's spectacular failure had impressed themselves on Dickens' consciousness. Full recognition of the railway can be found in "Dombey and Son" (1848), which date is significant in the light of the events just mentioned. Of course, this harbinger of a new age had been anticipated in Turner's painting of 1844, "Rain, Steam and Speed", in which the hare, the historic natural symbol of speed, vainly tried to outdistance the racing train.



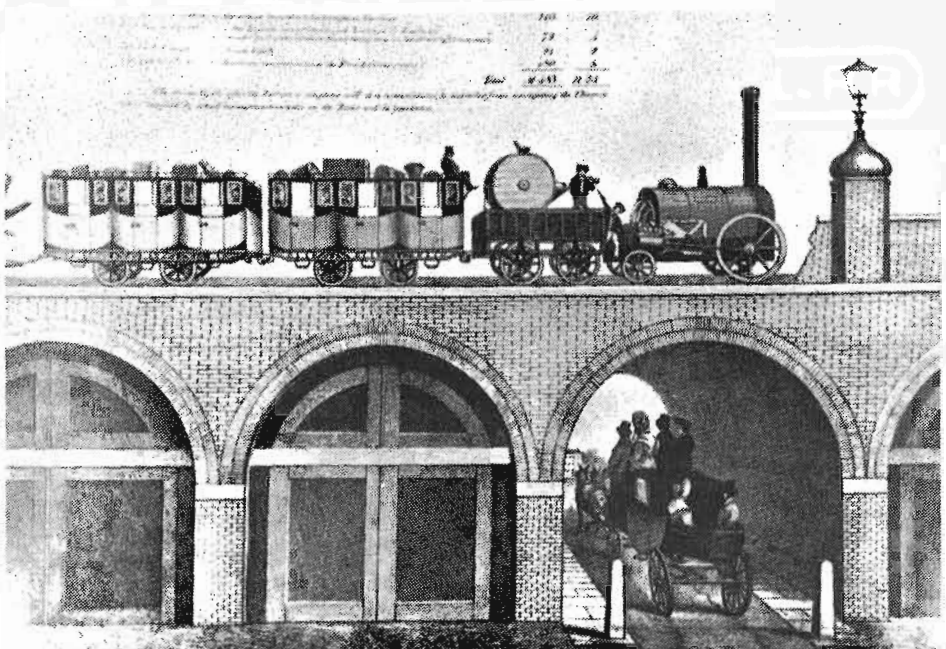
RAIN STEAM AND SPEED. This famous painting done by Turner in 1844 shows a Great Western train in a rainstorm. This is one of the first of the impressionistic paintings that were to become so much the style by the turn of the century.

Indeed, "Dombey and Son" not only marked the emergence of a new epoch, but also the development of the writer as an artist, rather than as an entertainer. Hitherto a novelist in the romantic tradition, Dickens now became increasingly concerned with the social maladies of the new industrial-commercial society in which he, of necessity, was forced to participate. As an artist rather than an entertainer, his many talents now became focussed more and more sharply, and greater singleness of mind a concentration of purpose resulted in an enhancement of his artistic vision. The great Georgian days, when Pickwick and his friends bowled along macadamized roads in coach and four (or possibly six) retreated farther and farther into the past, and Gradgrind, Bounderby, Veneering and Podsnap - personages sometimes unworthy of the dignifying "Mr." had usurped Weller's erstwhile place and the iron horse was snorting and fuming its way along a road - not a macadam, but of iron - the burgeoning highway of a frenzied age - "with your hammering and roaring and hissing and lamp-iling, you brute!" - as Mrs. Gamp expostulated, shaking her umbrella.

It is worthy of note, at this point, that the novelist had begun to use poetic symbols to express the characterizing theme of his genius, as related to the boundaries of the art-form of the



A STEPHENSON PASSENGER LOCOMOTIVE OF 1831 this was typical of the earliest successful "iron horses" that were soon to replace the real horses for inter-city travel.



THE FIRST RAILWAY IN LONDON was the London and Greenwich which was built for much of its length on brick arches. The coach passing underneath will soon be replaced by the steam locomotive passing overhead. This view was made in 1836, the year the railway opened.

novel. Specific among these symbols was the railway, a symbol of the power, the inflexibility and the ruthlessness of the new and largely unanticipated era.

Dickens' "Recherche du Temps Perdu" is faithfully recorded: "I left Dullborough (says the Uncommercial Traveller) in the days when there were no railroads in the land, I left it in a stagecoach I was cavalierly shunted back into Dullborough the other day by train.... and the first discovery I made was that the Station had swallowed up the playing field.

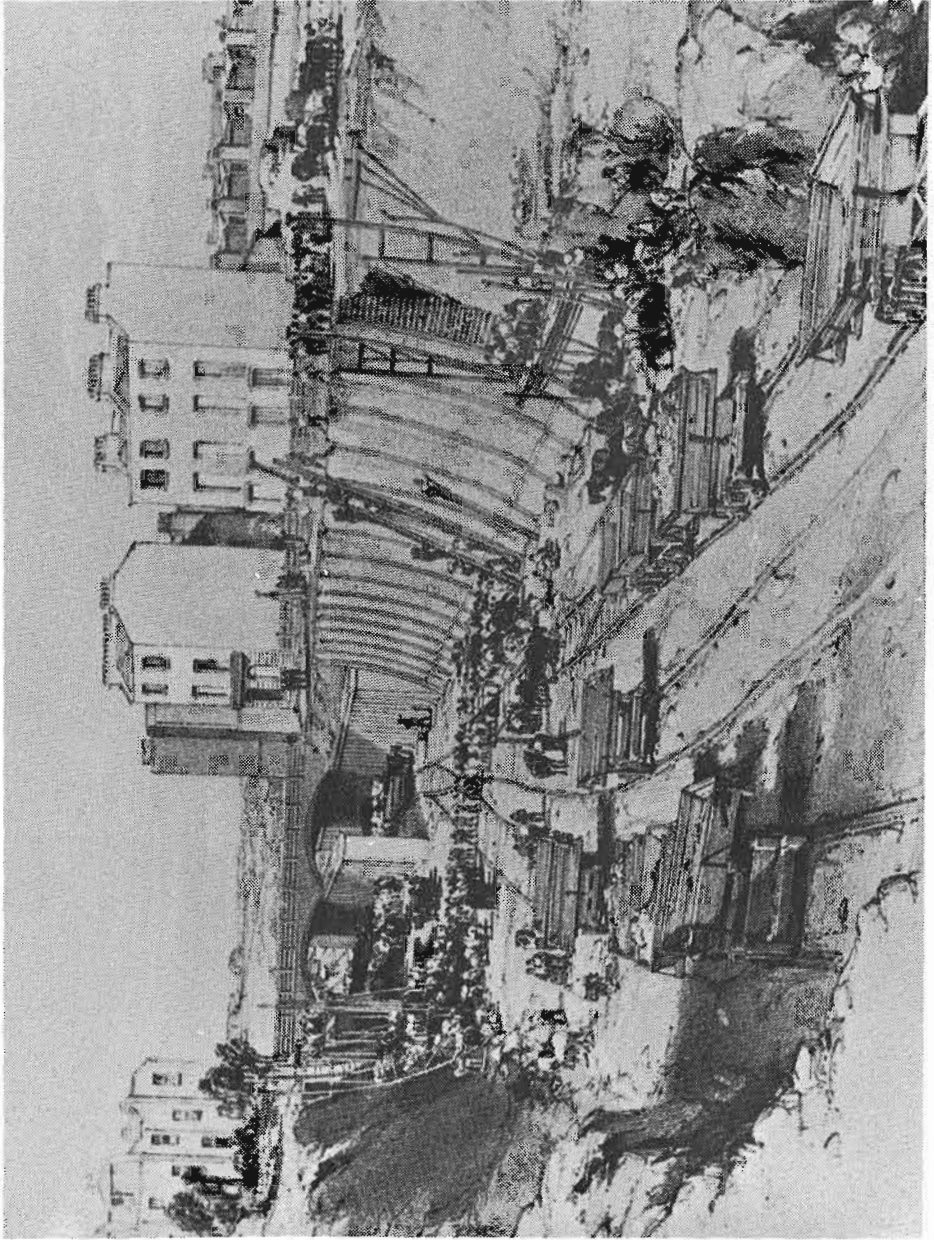
It was gone. The two beautiful hawthorn-trees, the hedges, the turf, and all those buttercups and daisies had given place to the stoniest of jolting roads; while beyond the station, an ugly dark monster of a tunnel kept its jaws open, as if it had swallowed them and were ravenous for more destruction."

Dullborough was Rochester, and, lest we should think for a moment that this "cri du coeur" is exaggerated, we need only remember the not wholly dissimilar descriptions of ravage and disorder associated with our latter-days super-highways!

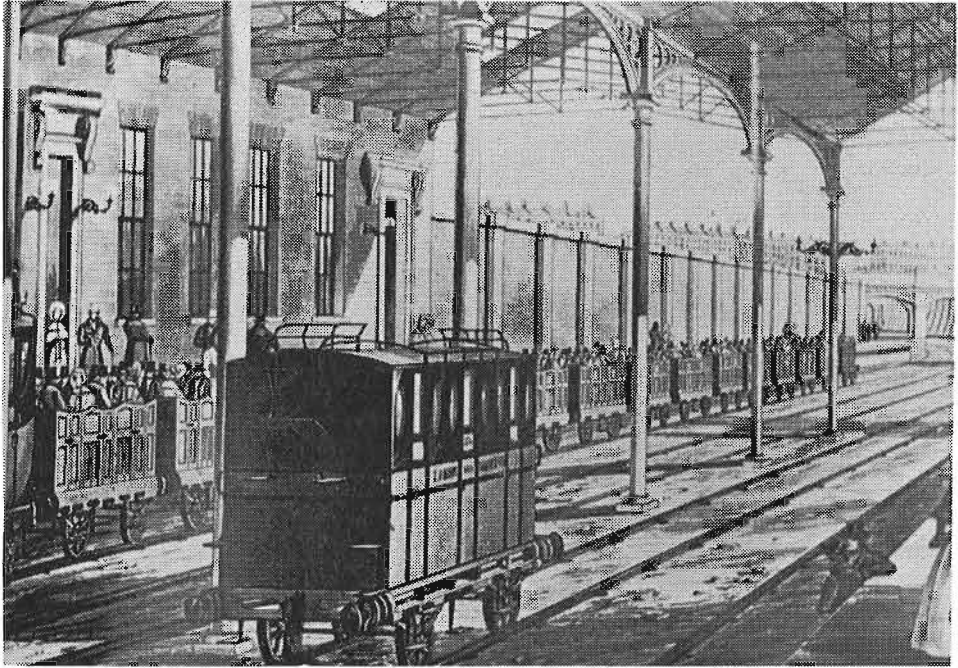


ONE OF THE MOST FAMOUS VIEWS BY J.C. BOURNE shows the excavation of Tring cutting just north of London in 1837 during the building of the London and Birmingham Railway. The entire cutting was dug by hand, the earth being hauled out by means of wheelbarrows.

Elsewhere, Dickens describes the actual coming of the railway; in Lincolnshire ("Bleak House", ch. 55) "preparations are afoot, measurements are made, ground is staked out ... fragments of embankments are thrown up, and left as precipices with torrents of rusty carts and barrows tumbling over them; tripods of tall poles appear on hill-tops where there are rumors of tunnels; everything looks chaotic" - no truer description of railway workings, as drawn by the contemporary artist J.C. Bourne; indeed, the description is apt for areas in our own cities where expressways gouge and chop.



"HOUSES WERE KNOCKED DOWN, streets broken through and stopped,..... buildings that were undermined and shaking propped by great beams of wood." Such was Dickens' description of the London and Birmingham cutting through Camden Town, and here we see it vividly depicted in this 1837 view by J.C. Bourne. One can well imagine Bob Cratchit's house being demolished, as well as the complete obliteration of Stagg's Gardens.

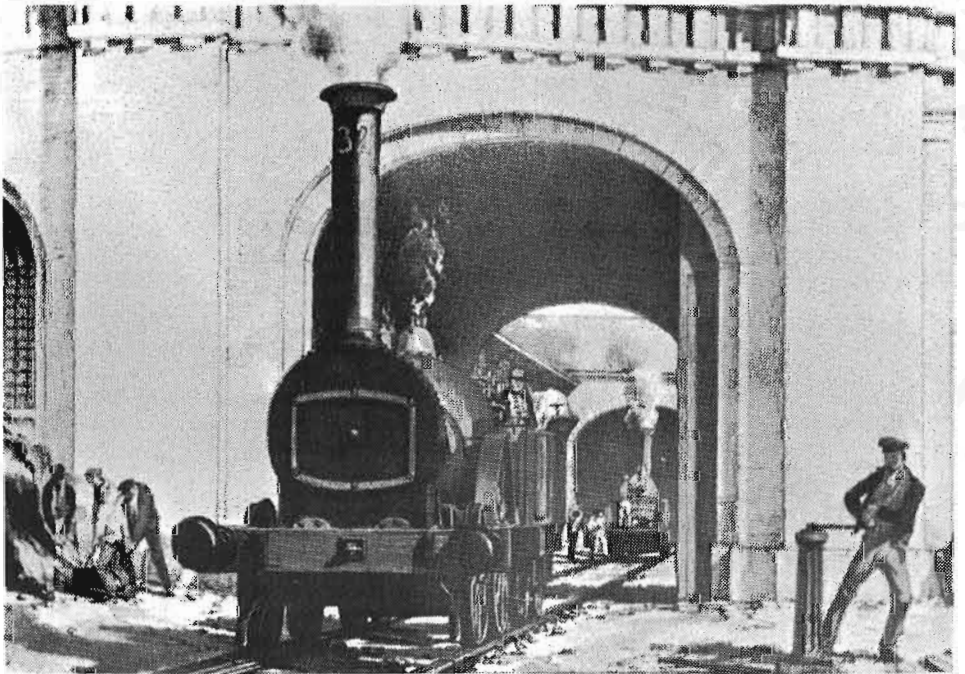


TWO VIEWS AT EUSTON STATION, the terminus of the London and Birmingham when it opened in 1838. In one view we see a second-class coach and a train of third-class (with a single first-class at the extreme left). The other view shows the huge arch built at the entrance to the station, sort of a monument to the new era. Sadly, the arch was demolished in 1962, but the station, completely rebuilt, is now one of the most modern on the British Rail system.

The entry of the London and Birmingham Railway into London in 1837 - 38 was reflected in "Dombey and Son", and was portrayed in Bourne's drawings. Little Paul Dombey was wet-nursed by the wife of Toodle, a railway fireman who lived in a ramshackled house in a rickety row of houses in Staggs Gardens, Camden Town, recently disorganized by the "first shock of a great earthquake.... with carcasses of ragged tenements, and fragments of unfinished walls and arches, and piles of scaffolding, and wildernesses of bricks and giant forms of cranes, and tripods straddled above nothing". Such is the description of the heroic work, conceived and executed by Robert Stephenson the son of the builder of the first practical railway locomotive, which led the new railway through a great cutting from Camden Town to its magnificent terminus in London, Euston Station.

Several years later, a servant is sent to find the old nurse, as Paul Dombey lies dying. "There was no such place as Staggs Gardens. It had vanished from the earth". Staggs Gardens had been irrevokably replaced by palaces, and tiers of warehouses, and streets swarming with passengers and vehicles of every kind.

"There were railway hotels, coffee-houses, lodging-houses, boarding-houses; railway plans, maps, views, wrappers, bottles, sandwich-boxes, and time-tables; railway hackney-coach and cab stands; railway omnibuses, railway streets and buildings... There was even railway time observed in clocks as if the sun itself had given in... Night and day

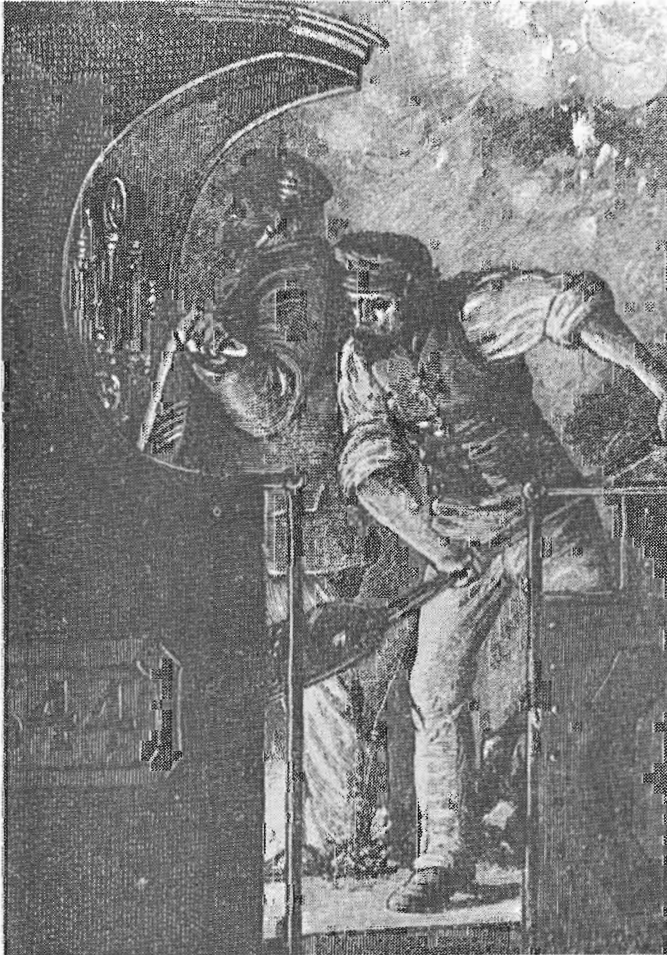


THE LOCOMOTIVE DEPOT AT CAMDEN TOWN in 1838 was a busy place as the engines were prepared to take the trains on the run north to Birmingham. Today, high speed trains, departing hourly, make the run in 100 minutes, but the speeds of 1838 must have seemed almost miraculous to those used to stage coaches.

the conquering engines rumbled at their distant work, or advancing smoothly to their journey's end, and gliding like tame dragons into the allotted corners grooved out to the inch for their reception, stood bubbling and trembling there, making the walls quake, as if they were dilating with the scret knowledge of great powers yet unsuspected in them, and strong purposes not yet achieved".

These were prophetic words, indeed.

Here emerges Toodle, one of the "New Men". A fireman, dressed in a canvas suit smelling of coal smoke and oil and smeared with coal-dust and cinders, is really not a bad fellow, certainly warm-hearted deliberately contrasted with the inhumanity of Dombey, who evaluates him as a "presumptuous raker among coals and ashes" merely because he wore a piece of crepe in morning for little Paul. Toddle in defence of his position, touches his chest and replies "The ashes sometimes gets in here and makes a man speak gruff, as at the present time. But it is ashes, sir, not crustiness".



THU. STOKER SHOVELS COAL while the engine driver has his hand on the regulator, in this night time scene on the footplate of a locomotive in the Victorian era. Enclosed cabs were unheard of in Britain in those days.

Toodle, the fireman, fires the train on which Dombey and Major Bagstock travel down to Leamington. The description of this journey is a singular piece of virtuoso writing, attaining in words the same kaleidoscopic effect of speed that Turner had achieved in paint. Thomas De Quincy had been able to describe much the same sort of thing in his account of speeding down with the mail coach carrying the news of victory in the French wars ("The English Mail Coach"), but the ambling speed of 8 or 9 miles per hour could not in any sense be compared to the 1848 speed of the Great Western Railway's "Flying Dutchman", to Didcot at 57 miles per hour average. The resulting almost delirious prose of Dickens' description is not altogether surprising. The author was quite rightly excited by the sensation of this new phenomenon of high-speed travel.

Always the master of the detail, the author compounded and accumulated it to produce the effect, nay, the sensation of speed. The train rushes and rocks across the landscape, "through the chalk, through the mould, through the clay, through the rock". Charging along with a shriek and a roar and a rattle, the description continues for two pages and more, concentrating sometimes on the pounding rhythm of the wheels in a paragraphed prose-poem. Obviously, this concentration can and has been criticised (Humphrey House) as ostentatious and overdone, but to those who are familiar with the basic theme of the melody, there are subtle variations, fuges and counterpoint rhythms, reflecting the changes in the lengths of the rail and the rubatos produced by switches and crossings:

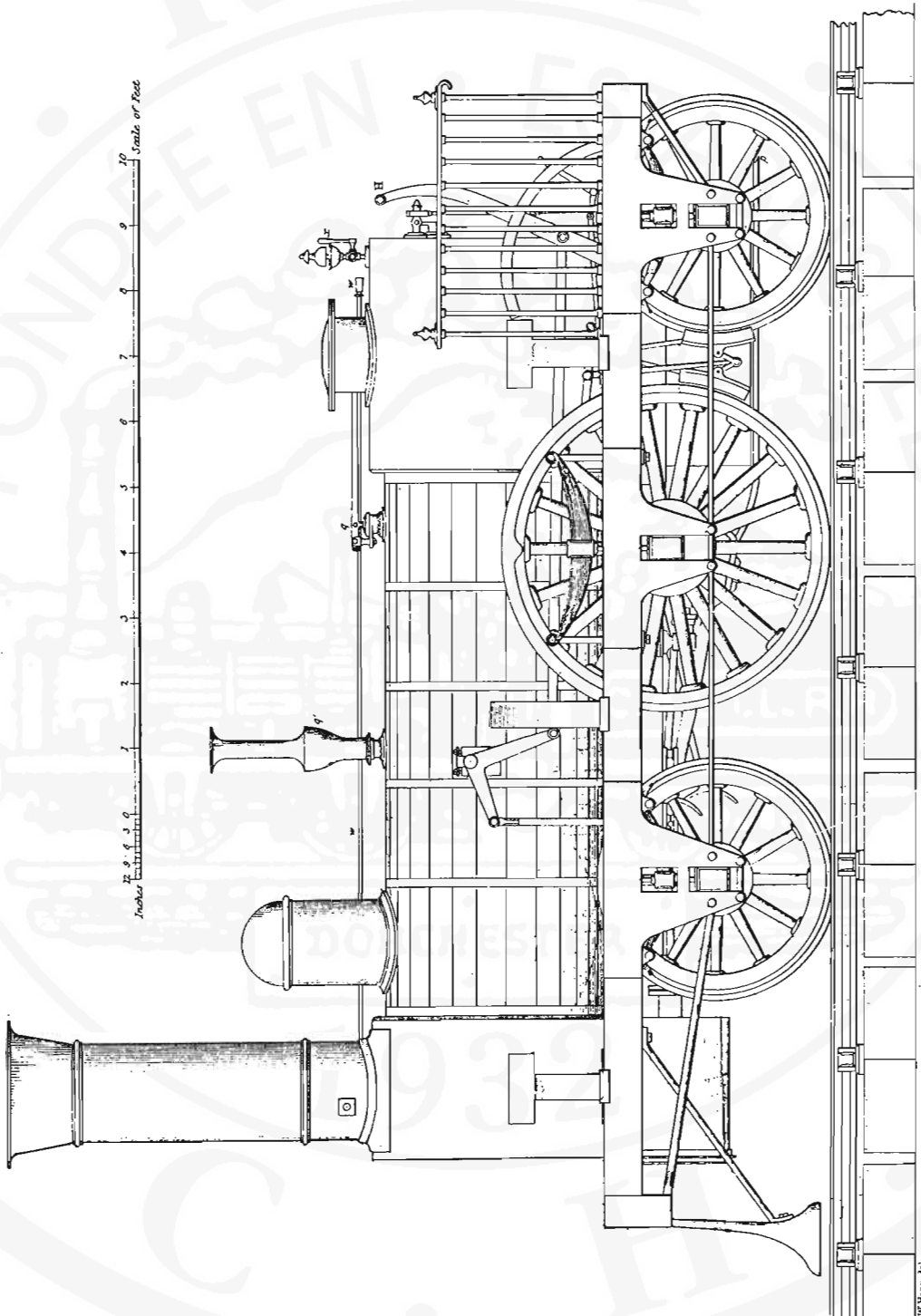
"Through the hollow, on the height, by the heath, by the orchard, by the park, by the garden, over the canal, across the river, where the sheep are feeding, where the mill is going, where the barge is floating, where the dead are lying, where the factory is smoking, where the stream is running, where the village clusters, where the great cathedral rises, where the bleak moor lies, and the wild breeze smooths or ruffles it at its inconstant will; away with a shriek, and a roar, and a rattle, and no trace to leave behind but dust and vapour; like as in the track of the remorseless monster, Death!"

Thus is the railway woven into the novel "Dombey and Son" as a symbol of the power and ruthlessness of this new form of travel. Thus is described the impact of the railway upon the Victorian Era. By 1854, ("Hard Times"), it had become one with the landscape and the social scene. Nevertheless, and although it played a less particular and spectacular part, it was still there, - shadowy, but in the background.

" A town of machinery and tall chimneys.... and vast piles of building full of windows, where there was a rattling and a trembling all day long, and where the piston of the steam engine worked monotonously up and down, like the head of an elephant in a state of melancholy madness".

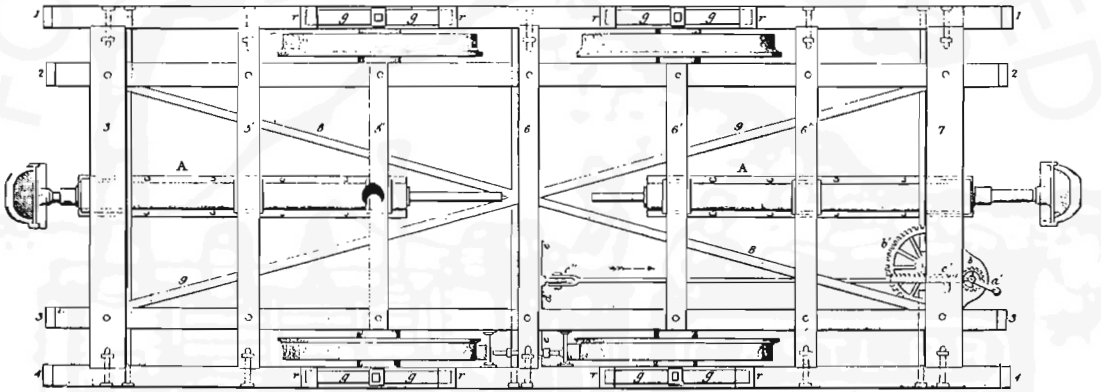
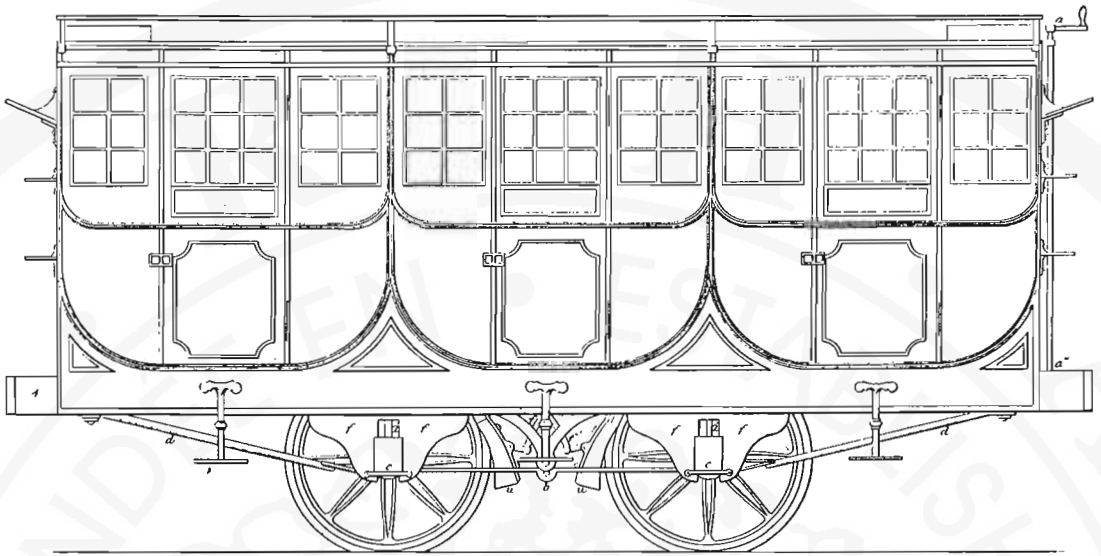
So he described Coketown. The simile of the melancholy mad elephant seems to be another recurrent symbol of the power and inhumanity of the industrial age. The travellers on the express trains of the age said that the illuminated buildings looked like fairy palaces. They were hardly heard over the rumble and rattle of the machinery in the factories. There were many other journeys by these expresses. Mr. Bounderby's country house, fifteen miles from Coketown, could be reached "by a railway striding on many arches over wild country, undermined by deserted coal-shafts, and spotted at night by fires

A MODERN LOCOMOTIVE OF THE ERA when Dickens was writing his earliest works; this 2-2-2 passenger engine was built by Stephenson's in the later 1830's. This drawing was published in 1838 and shows a considerable amount of detail.



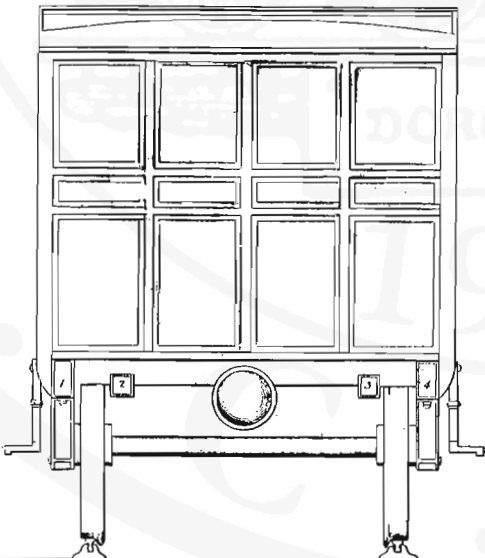
Published by Longman & Co. April 1838.

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Published by Longman & Co April 1856.



A FIRST CLASS PASSENGER CARRIAGE OF 1838 still showing the influence of the older stagecoach design, although three bodies are now mounted on one four-wheel frame. This is the kind of carriage that was replacing the stagecoach only one year after "Pickwick" first appeared in book form. Unfortunately no original railway carriages of this design have survived.

and black shapes of stationary engines at pits' mouths." Bitzer arrived by train, "shrieking and rattling over the long line of arches", with the intelligence of Mrs. Gradgrind's illness, and Louisa trundled back to Coketown, to be engulfed in its smoky jaws. Mrs. Sparsit caught the train, at the crisis of Louisa's tragedy, and was carried away into the country in an evil attempt to compromise Louisa and her supposed lover. As daylight failed, the tempest broke and Louisa, unrecognized by Mrs. Sparsit, sat with her in the station waiting room, listening to the thunderstorm and watching the lightening and its reflections quivering and scintillating on the shining rails.



INSIDE A THIRD-CLASS CARRIAGE, a good cross section of travellers is depicted in this painting done in the early days of railroads.

"The seizure of the station with a fit of trembling, gradually deepening to a complaint of the heart, announced the train. Fire and steam and smoke and a red light; a hiss, a crash, a bell, and a shriek; Louisa put into one carriage, Mrs. Sparsit into another; the little station a desert speck in the thunderstorm."

Such descriptions are a triumph of the impressionist technique. The whole scene is described with a minimum of words and a maximum of effect. Short edgy phrases are reminiscent of "Hard Times", which itself is a truly poetic piece of writing, having a close-knit framework of interwoven plots, a taut style and recurring images. The railway is one of the most effective. Dickens used this means to intensify the excitement of the novel, with its accompanying characteristics of speed, remorselessness, swiftness and all of the other attributes of this form of travel.

The reader cannot fail to be impressed by the novelist's remarkable ability to observe accurately. He was, at one in the same time, a reporter and a novelist. His writing is truly effective because he takes the trouble to describe things accurately, and thereby minimizes the disturbance to the reader which might otherwise be caused by inaccurate recording. When he wanted to know what driving an engine was like, he requested an engine pass from the Secretary of the South Eastern Railway for his young contributor, John Hollingshead.

In "Household Words" (1850-59) and "All the Year Round" (1859-70) Dickens edited articles about railways, ranging from serious contributions to descriptions of journeys, stories and humorous poems. The railway restaurant, a fair target for humour and satire in our own time, was a favourite subject for derision:

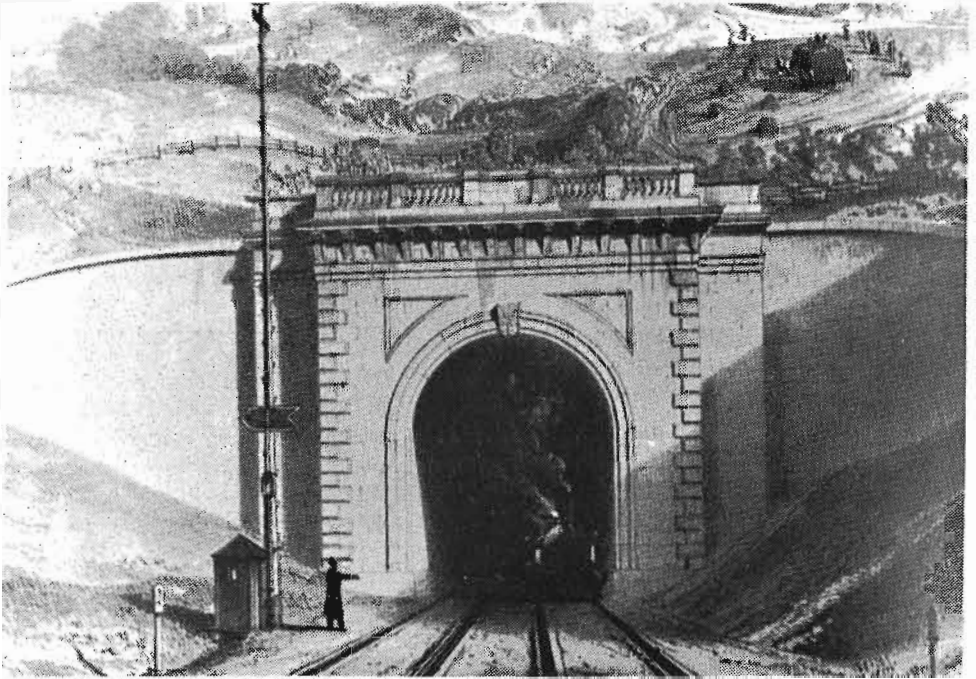
"I cannot dine on stale sponge-cakes that turn to sand in my mouth. I cannot dine on shining brown patties, composed of unknown animals within, and offering to my view the device of an indigestible star-fish in leaden pie-crust without. I cannot dine on a sandwich that has long been pining under an exhausted receiver. I cannot dine on barley-sugar. I cannot dine on toffee."

The aforementioned, in 1860, was a precis of the station restaurant at Mugby Junction, which was really Rugby, one of the principle towns on the main railway from London northwards. The place was minutely and memorably described in "The Lazy Tour of Two Idle Apprentices", Household Words, 3 October, 1857. The railway lines crossing and recrossing "like a congress of iron vipers"; sidings and cattle cars full of frightened, bellowing animals, warehouses where merchandise "seemed to have taken the veil (of the consistency of tarpaulin) and to have retired from the world without any hope of getting back to it". An elevated signal box where the signalman "was constantly going through the motions of drawing immense quantities of beer at a public-house bar", as he raised and lowered the signals, or moved the switches.

On the stations walls, stark in the chalk-white gas light, blatant advertisements for tonics, beers, condiments, sauces, bedsteads, patent safes, umbrellas and seaside resorts' importuned the observer. The activity in the station itself fluctuates between total unconsciousness or utter imbecility, depending on the single awkward shave of the air by a wooden razor, as Dickens describes the signal.

"Simmering, whistling, trembling, rumbling thundering. Trains on the whole confusion of intersecting rails, crossing one another, bumping one another, hissing one another, backing to go forward, tearing into distance to come close. People frantic. Exiles seeking restoration of their native carriages, and banished to remoter climes... Then, in a minute, the station relapsed into a stupor, as the stoker of the Cattle Train, the last to depart, went gliding out of it, wiping the long nose of his oil-can with a dirty pocket-hankerchief.

While the railway purist would rebel at many of the descriptions in this particular paragraph, some liberty may be permitted the novelist and the perhaps accidental transcription of some of the events can be justified by the success achieved in producing the desired effect in the reader.



THE ENTRANCE OF THE BOX TUNNEL on the Great Western soon after its opening in 1841. A signalman's duty at such locations was often lonely and could be hazardous, especially in bad weather.

Like the refrains in the minor key in the opera overture, portending disaster and death, so the story of the lonely signalman, printed in "All the Year Round" (1866) could be designated as premonitory for the novelist himself. The surroundings for this macabre masterpiece were a tunnel at a remote place and the signal tower in the deep cutting leading to it. A red light gleams balefully from the tunnel, like a malevolent eye, through the drifting steam and smoke from the passing trains. Twice has the signalman been aroused by the ringing of his warning telegraph bell, apparently inaudible to any ears but his own. Twice has a spectral figure appeared at the tunnel mouth, simultaneously with the imaginary ringing bell. Each appearance of the spectre precedes a disaster on the railway. The third visitation of the ghostly figure gives warning of another disaster, but where? And what is the nature of the danger? There is danger impending, some dreadful calamity will happen, but the terrified signalman cannot determine its location or its nature. In apprehension, he goes out on his routine task of extinguishing the red tunnel light just as dawn breaks, and is himself cut down by an engine and killed at the mouth of the forbidding tunnel.

A year previous, Dickens was travelling on the Folkestone Boat Express of the South Eastern Railway. Near Staplehurst, this railway was carried over the little river Beult on a series of cast iron trough girders resting on brick piers, about 10 feet above the stream. Work was in process for the replacement of some rails on the bridge and, to protect the workers and warn the trains, the foreman had been issued with explosive track torpedos, which were placed on the rails at some distance from the bridge so that trains could be stopped before the bridge if this necessity arose. John Bengel, the foreman, intended to complete the changing of the rails between 2.51 and 4.15 p.m., when

no trains were scheduled to pass. Although the warning torpedos were available, the foreman and his crew were certain of their ability to perform the work in the time allowed and therefore did not place these warning devices on the track when a rail was removed. On the last afternoon of the three in which the work was to be done, the fatal oversight took place. There was one train on the timetable which did not always run to a fixed schedule. This was the Folkestone Boat Express, which was known by all railway workers as a "tidal" train, since its schedule was dependent on the arrival of the Folkestone packets, which were themselves dependent on the tides for docking. The train was due at the Staplehurst Bridge at 3.15, and the foreman planned on its passing at not before 5.20. Disaster in these circumstances was inevitable.

The train, composed of a luggage van and six coaches, approached the bridge at about fifty miles per hour, which was not considered fast for those days. At that moment, there were still two 21 foot rails to be replaced on the bridge. The watchman, Wilde, waved his red flag violently and the engineer responded by applying the brakes and blowing the whistle. But insufficient advance warning had been given and although the train slowed perceptibly, it was relentlessly carried to the fatal spot. Charles Dickens was a passenger in the first coach. Before the frightened gaze of the workers, a scene of awful disaster unfolded.

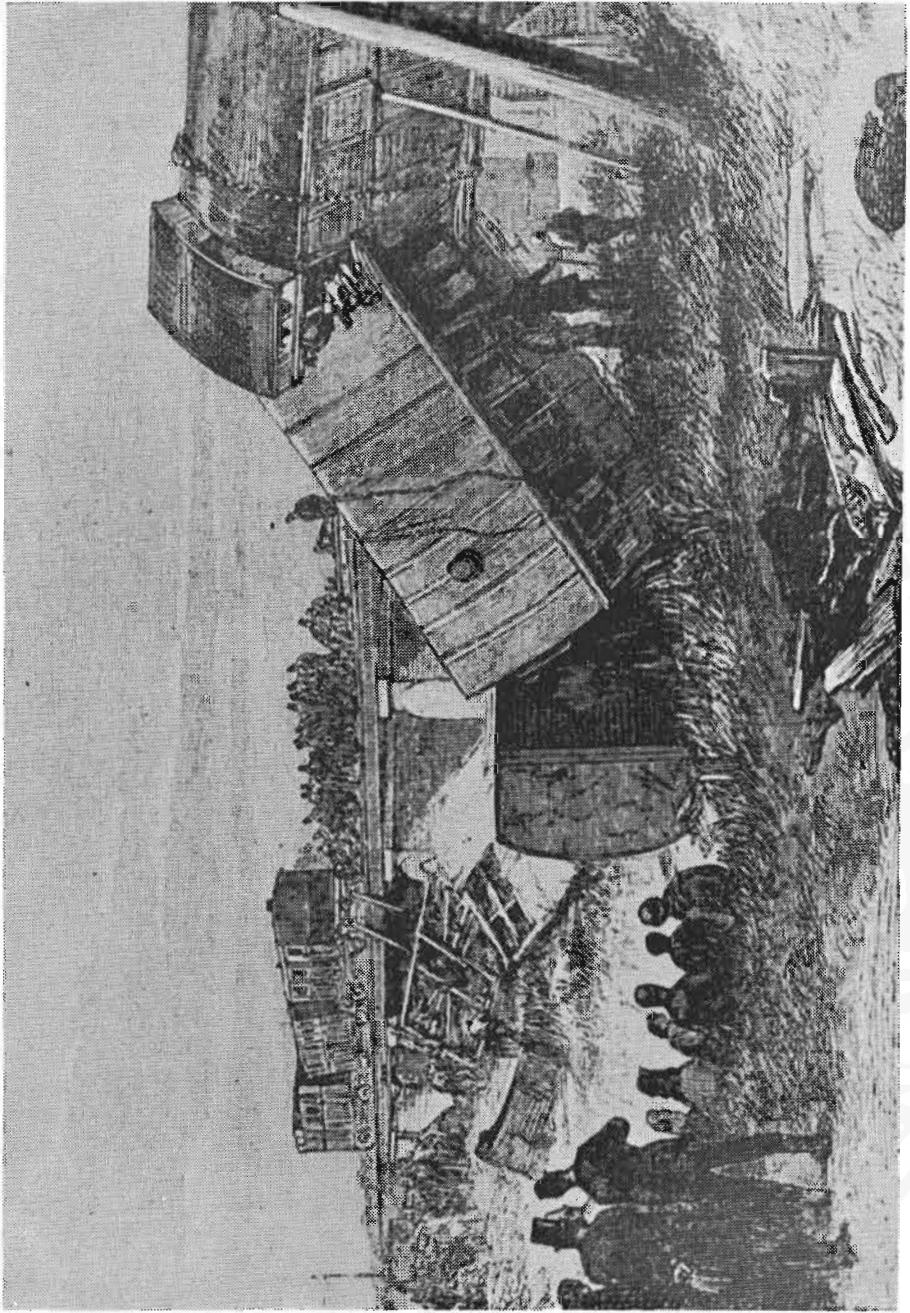
Remarkable to relate, the locomotive, its tender and the baggage car of the 13-car train succeeded in crossing the rail-less part of the bridge. However, the following passenger vehicles were not so fortunate. The strain on the cast-iron beams supporting the rails was too great and they broke. This precipitated five of the first six passenger cars with a crash ten feet down off the parapet, where they lay in a mass of splintered wreckage, one standing on its end, another lying on its roof. The first passenger carriage remained half on and half off the bridge, hanging at a perilous angle and upheld by the coupling of the baggage car, while the rear cars stopped in time and stayed on the rails. Ten passengers in the wrecked coaches were killed, and forty-nine were injured.

In a postscript, added to "Our Mutual Friend", the manuscript of which the author was reading when the tragic accident occurred, we read:

"On Friday, the ninth of June in the present year, Mr. and Mrs. Boffin (in their manuscript dress of receiving Mr. and Mrs. Lamble at breakfast) were on the South Eastern Railway with me, in a terribly destructive accident... When I had done what I could to help others, I climbed back into my carriage - nearly turned over a viaduct and caught aslant upon the turn to extricate the worthy couple. They were much soiled, but otherwise unhurt.. I remember with devout thankfulness that I can never be much nearer parting company with my readers forever, than I was then, until there shall be written against my life the two words with which I have this day closed this book - The End."

While Dickens sustained no physical injury in the accident, his terrible experience had a profound psychological effect on his tender and vulnerable spirit. Shortly thereafter, he wrote:

"I am curiously weak, weak as if I were recovering from a long illness. I begin to feel it more in my head. I sleep well and eat well; but I write half a dozen words and turn faint and sick."



THE TRAGIC WRECK AT STAPLEHURST on June 9 1865 shown here as the repair crews were well at work removing the debris. The car in which Dickens had been riding (probably the third from the left) had already been re-railed, but several totally destroyed cars still lie in the river bed. It is said that Dickens never fully recovered from his experience in this wreck, and he died exactly five years to the day after it.

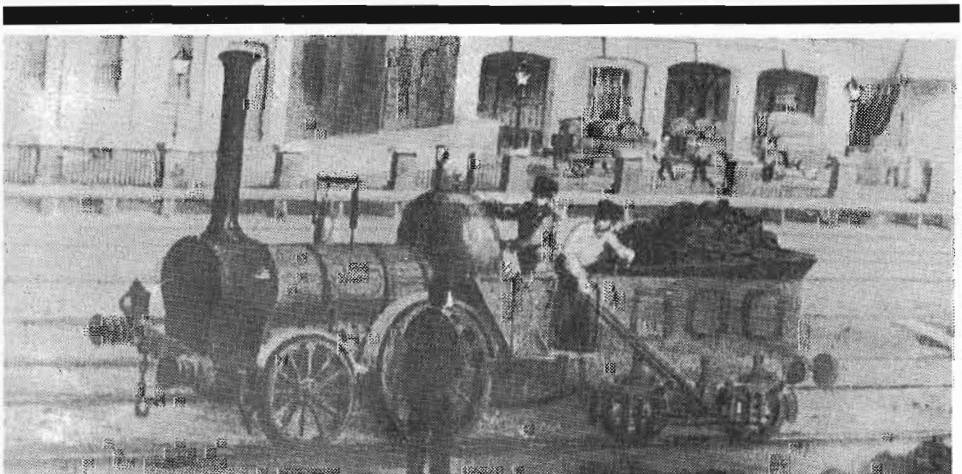
Further travel, by railway at least, was for the time being practically impossible.

"A perfect conviction against the senses, that the carriage is down on one side (and generally that is the left, and NOT the side on which the carriage in the accident really went over) comes upon me with anything like speed, and is inexpressibly distressing."

Even in this overwhelming delusion, the author continued to use his remarkable analytical powers, the descriptions not being marred by any hallucination.

On Tuesday, June 13, 1865, he wrote to his friend Mitton: "I don't want to be examined at the inquest and I don't want to write about it. I could do no good either way, and I could only seem to speak about myself, which, of course, I would rather not do. I am keeping very quiet here. I have a - I don't know what to call it - constitutional (I suppose) presence of mind and was not in the least fluttered at the time. I instantly remembered that I had the manuscript of a number with me and clambered back into the carriage for it. But in writing these scanty words of recollection I feel the shake and am obliged to stop."

Despite the lingering effects of this tragic experience, Charles Dickens undertook a second trip to America late in 1867. More than a quarter-century had passed since the visit in 1842, and this time most of the travel was by rail. However the long journeys and one-night stands took their toll and on his return to England in the spring of 1868 Dickens was virtually worn out. In late 1869 he began work on his final book "The Mystery of Edwin Drood" which was still unfinished at his death. It is true to say that Charles Dickens never recovered completely from the effects of the Staplehurst wreck, and on June 9 1870, the fifth anniversary of the accident, this foremost novelist died in his fifty-eighth year. The loss to the literary world which was sustained thereby cannot be measured. The personal loss to the individual reader of this great Victorian writer can only be measured in the sense of regret which is felt when we accept the fact that there will never be a truly satisfying solution to the "The Mystery of Edwin Drood".



THE LIVERPOOL and MANCHESTER RAILWAY

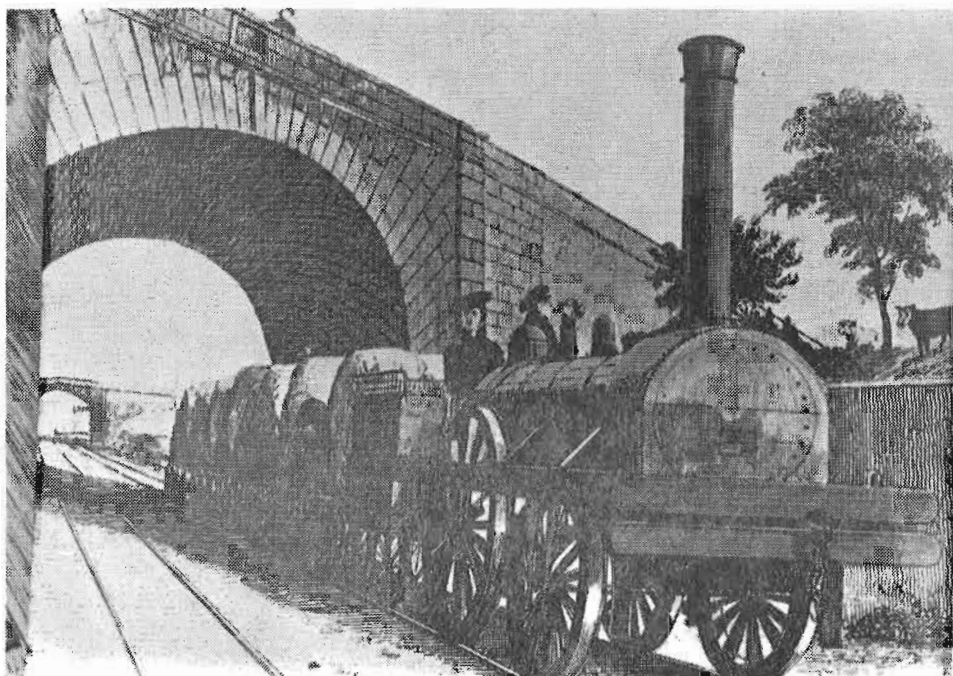
By Fred Angus

In 1980 the 150th anniversary of the opening of the Liverpool and Manchester railway occurred, and appropriate celebrations were held in England to mark the occasion. These events, called "ROCKET 150", also commemorated the Rainhill Trials of 1829 which had proved the superiority of steam locomotion, and which were won by Stephenson's famous locomotive "Rocket".

Almost every rail enthusiast has no doubt heard of the Rocket and of the Liverpool & Manchester Railway. No doubt many also know that the Rocket, or what remains of it, is carefully preserved at the Science Museum at South Kensington in London, but little is said of the railway itself. What was it like, and does any of it still exist after a century and a half? The answer is that the L. & M., a great feat of engineering for its time, is still alive and well, and in regular service. This includes most of the major structures which date back to the 1820's.

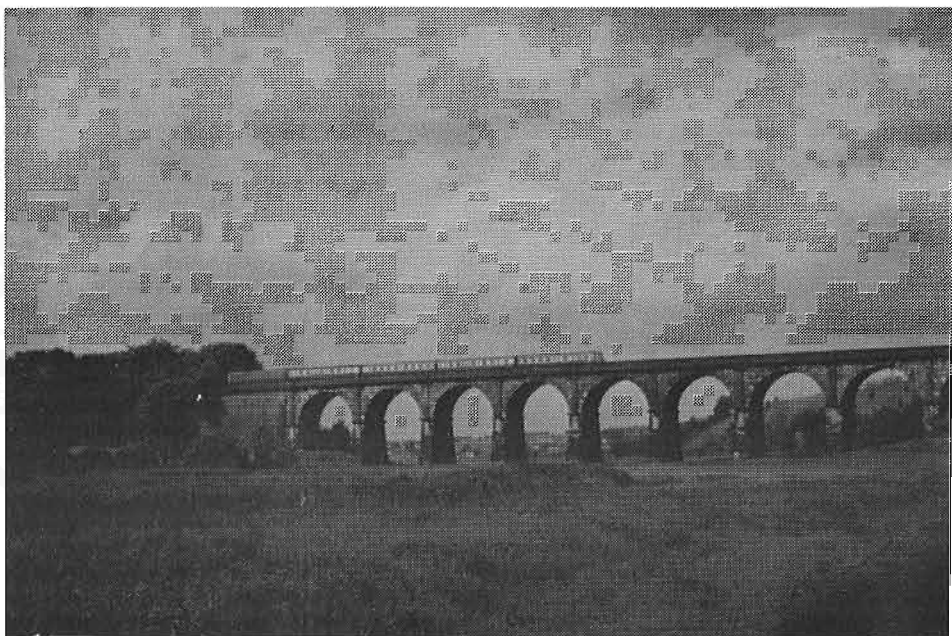
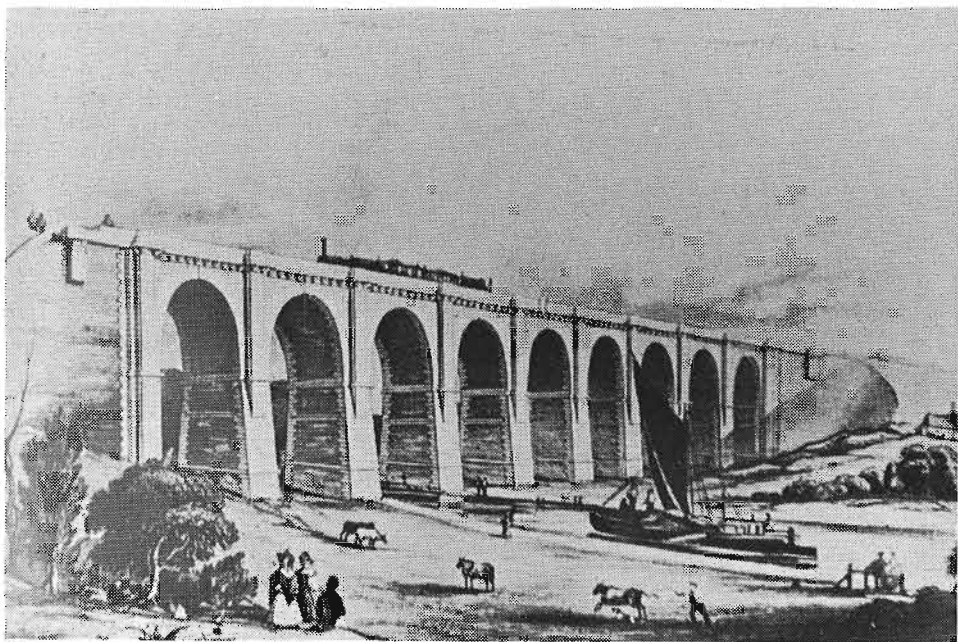
The story of the Liverpool and Manchester Railway has been told countless times, but the following is a brief summary: A project to build a railway to connect the manufacturing city of Manchester with the seaport of Liverpool, a distance of just over 30 miles, had started in the early 1820's. This was before the opening of the Stockton and Darlington Railway in the North of England, and was in an era when railway technology was in a very early state. The promoters of the L. & M. submitted a bill to Parliament in 1825 but after much debate it was defeated, due mainly to the opposition of canal proprietors and land owners in the area. However in 1826 another bill was submitted involving a route which bypassed the lands of the strongest opponents of the railway, and this time the bill passed. Ironically, the revised route was two miles shorter than the original one, being almost a straight line, but it did involve more difficulties in construction such as the crossing of Chat Moss and the Sankey Valley. Work began in 1826 and was completed in 1830, the opening ceremony being on September 15 of that year. Unfortunately, the festivities were spoiled by the tragic death of William Huskisson, one of the guests of honour, who was run over by none other engine than the Rocket itself! However, the railway age had truly begun, and regular passenger service began on September 17. From then on Liverpoolians and Mancunians could travel to each other's city in two hours instead of almost all day the old way, and in the years ahead the new means of transportation spread around the world.

As work on the railway project was nearing completion, in early 1829, the question arose of what motive power to use. After considering such means as winches, and even horses, the directors decided to try the relatively new method of steam locomotives. A contest was held in October 1829 to determine the best locomotive design; this was held at Rainhill on the already-completed part of the railway, and became famous as the Rainhill Trials. The win-



A CENTURY AND A HALF SEPARATE THESE TWO PICTURES, but the scene is the famous Skew bridge at Rainhill station. In the old view we see a train pulled by the 1830 locomotive "Planet" while in the photo of 1980 can be seen a sign proclaiming this as the site of the Rainhill Trials of 1829.

1980 photo by Robert V.V. Nicholls.



SANKEY VIADUCT IS STILL THE MOST IMPRESSIVE structure on the Liverpool and Manchester line, and it looks almost the same as it did when built in 1828. The canal is now abandoned, but the railway still carries much traffic, although the trains look much different from those of 1830.

New photo by Fred Angus.

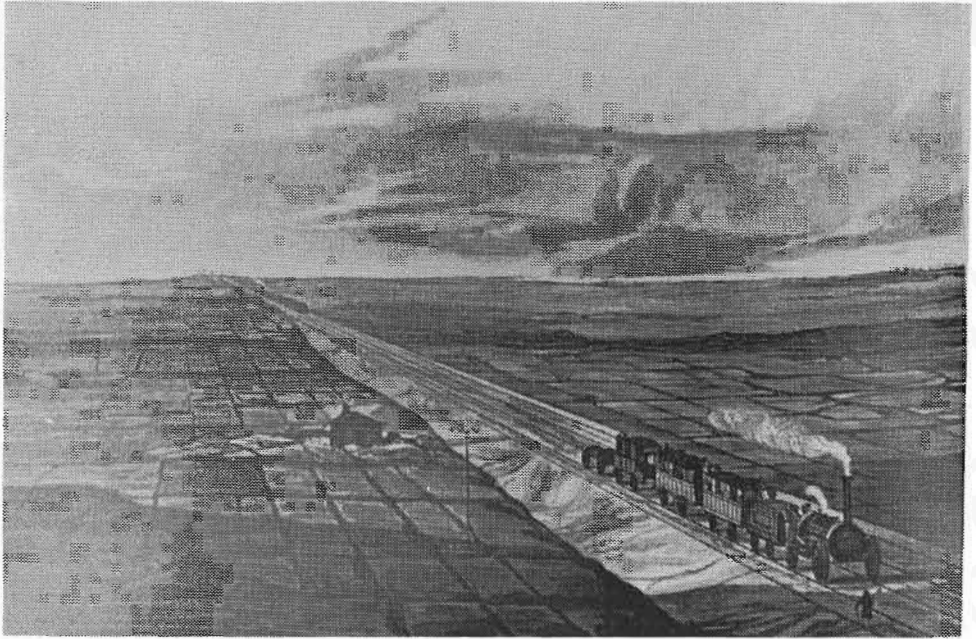
ning engine was the Rocket, built by George and Robert Stephenson at Newcastle, and the eventual outcome was the spread of locomotive technology to all places where railways would be built.

Another almost immediate legacy of the L. & M. was the use of the Stephenson gauge of 4' 8½". The L. & M. directors had first planned on using 5' 6" between the rails, but at the urging of George Stephenson, adopted 4' 8½" the same as the Stockton and Darlington. Perhaps a wider gauge would have been better, certainly I.K. Brunel thought so when he used 7 feet on the Great Western, but in any case 4' 8½" took hold and is the standard in the majority of countries. Fortunately, the other standard, 4' 4" between double-track lines, was soon widened. This proved to be far too narrow, as was soon shown by the circumstances of Huskisson's death.

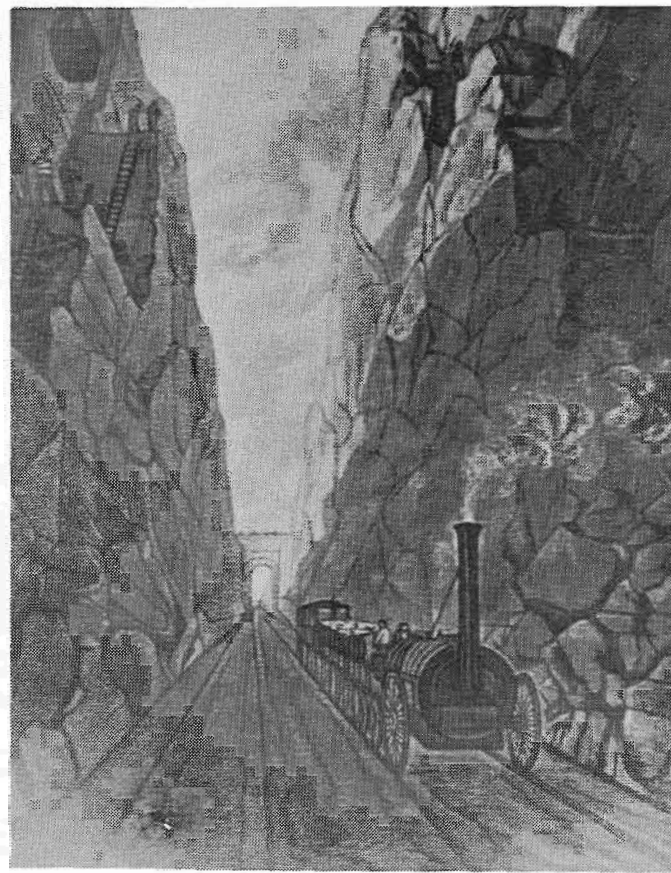
The career of the Liverpool and Manchester as an independent company was short, for in 1845 it became amalgamated with the Grand Junction railway under the name of the latter. This, in 1846, became part of the London & North Western Railway, and this in turn joined the London Midland and Scottish (L.M.S.) in 1923. Finally, in 1948, the entire system was nationalized as British Railways. Over the years the former L. & M. has been modernized and improved, but much of the original still exists.

Contrary to popular belief, the Liverpool and Manchester was definitely not a small lightly built primitive railway soon to be replaced by more modern construction. It was in fact built to the highest standards using massive structures in great contrast to the diminutive (by today's standards) rolling stock. This shown by the total cost of 820,000 pounds sterling (then about \$4,000,000) a huge sum for a 30-mile railway in 1830. The reason for this is simple. Since locomotives in those days were not very powerful, they were not expected to be able to pull trains up steep grades, or around sharp curves. Hence the track of early railways had to be as straight and level as possible. This usually meant making cuttings, embankments, viaducts, and tunnels which were unnecessary in later years when more efficient locomotives permitted steeper grades to be built. In fact the 1½ grades on the Sutton and Whiston inclined planes near Rainhill were feared to be beyond the capacity of locomotives. Stationary engines were planned to haul trains up these inclines, but were soon found to be unnecessary as the locomotives climbed the grades with relative ease. The mere fact that the line is so straight and level makes for efficient operation, and it is understandable how it has survived when many newer railways have long been abandoned.

Today, many trains run daily on this right-of-way where the Rocket once ran. One can still ride across Chat Moss where George Stephenson built his "floating mattress" to cross the swampy ground. Although since built up by ballast, the roadbed is still the original, and one can still feel the "bounce" as a train goes by. Further west are the great viaducts at Newton and Sankey. The Sankey viaduct with its nine huge arches of 50-foot span each, is the most impressive structure on the line, and dwarfs even the modern diesel trains that cross it. It is difficult to believe that it was built in 1828! Rainhill station is still there and sports a sign showing that this was the site of the Rainhill Trials. It is here that the "Rocket 150" celebrations were held in 1980. Trains still go up and down the Sutton



THE CROSSING OF CHAT MOSS BY THE LIVERPOOL AND MANCHESTER as it appeared in 1830 and in 1978. The area is still desolate although much of the land has been reclaimed.



OLIVE MOUNT CUTTING IN 1830 AND TODAY. The cut was widened to take a third track which has since been abandoned, but the sheer rock walls and the bridge crossing the line have changed little in the intervening century and a half.

1978 photo by Fred Angus.

and Whiston inclined planes, although now they hardly slow down as the diesel engines make short work of the 1% grade. The Broad Green embankment, in places 45 feet above the surrounding ground, was built of rock taken from the Olive Mount cutting. It is almost two miles long, and just as high as in 1830 but does not look as prominent, as the surrounding area has been greatly built up in recent years. Close to Liverpool, the Olive Mount cutting, 70 feet deep and more than a mile long, still slices through solid rock, but is now much wider than its original 20 feet. Entrance to Liverpool harbour was originally through a mile-long tunnel, worked by stationary engines, and opened in 1829. The tunnel is still intact but disused since 1965; trains now enter Lime Street station through a newer cut and tunnel built originally in 1836. There was also a shorter passenger tunnel to the first passenger terminal on Crown Street. This was abandoned in 1836 but is still in good condition, and still has the date "1829" in raised letters in the stonework at its entrance.

The Liverpool and Manchester is usually considered to be the first true railway, in the modern sense, in the world. Its opening in 1830 is considered the start of the railway era. Today it is still a main-line link in a vast railway system, and with further modernization, including possible electrification, it is very likely to survive to celebrate its bicentennial with, hopefully, many of the features of 1830 still in service as George Stephenson planned them.



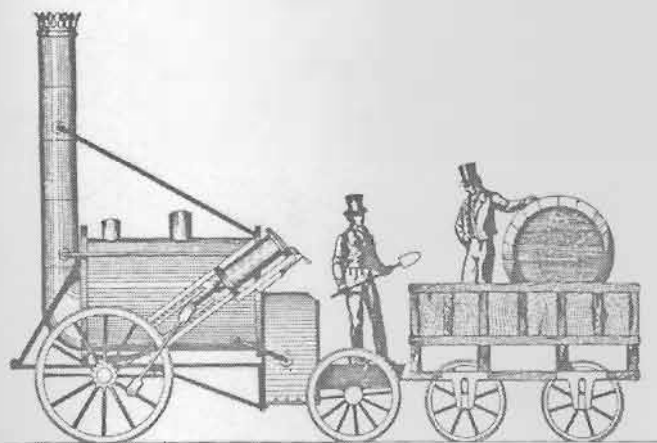
GOING UP THE SUTTON INCLINED PLANE the train is about to pass under the New Street bridge, one of the original L. & M. bridges built in 1829. This is one of the 1% grades which it was feared could not be surmounted by locomotives, until the "Rocket" proved this fear to be groundless. The bridge is still in use, but as it is only 26 feet wide it has had a rather ugly modern sidewalk attached to one side.

Photo by Fred Angus.



THE ACTUAL SITE OF THE RAINHILL TRIALS, this section of track east of Rainhill station was photographed from the cab of a speeding diesel rail car in September 1978.

Photo by Fred Angus.



BACK COVER

ONE OF THE EARLIEST RAILWAY TIMETABLES, this schedule of the Liverpool and Manchester Railway was issued on June 1 1832, less than two years after the line opened.

TRAVELLING

By the Liverpool and Manchester Railway.

JUNE 1, 1832.

<i>From Liverpool.</i>	<i>From Manchester.</i>
Seven o'Clock 1st Class Train.	Seven o'Clock 1st Class Train.
Quarter-past 7 o'Clock ... 2d Class Train.	Quarter-past Seven o'Clock, 2d Class Train.
Ten o'Clock 1st Class Train.	Eight o'Clock 2d Class Train.
Half-past Ten o'Clock ... 2d Class Train.	Ten o'Clock 1st Class Train.
Twelve o'Clock 2d Class Train.	Twelve o'Clock 2d Class Train.
Two o'Clock 1st Class Train.	One o'Clock 2d Class Train.
Three o'Clock 2d Class Train.	Two o'Clock 1st Class Train.
Four o'Clock 2d Class Train.	Three o'Clock 2d Class Train.
Five o'Clock 1st Class Train.	Five o'Clock 1st Class Train.
Half-past Five o'Clock ... 2d Class Train.	Half-past Five o'clock ... 2d Class Train.

N. B. This last Train, on the Manchester Market Days, (Tuesdays and Saturdays,) will leave Manchester at Six, instead of half-past Five.

SUNDAY.

Seven o'clock 2nd class Train.	Five o'clock 1st class Train.
Eight o'clock 1st class Train.	Six o'clock 2d class Train.

FARES.

By 1st Class Train, Coaches, Four Inside	6s. 0d.
" Ditto, Ditto, Six Inside	5s. 0d.
" 2d Class Train, Glass Coaches.....	5s. 0d.
" Ditto, Open Carriages	3s. 6d.
Charge for the conveyance of Four-wheeled Carriages,	20s. each.
" Ditto Two-wheeled ditto	15s. "

Persons and Parcels may be booked by any of the above Trains for

WARRINGTON.

FARES, from Liverpool or Manchester, First class, 4s; Second class, 3s.

LIVERPOOL TO BOLTON.

TIMES OF DEPARTURE. Half past Seven o'clock and Eleven o'clock in the Morning, Half past Two o'clock and a Quarter-past Five o'clock in the Afternoon; and on Sundays there is one Departure only, namely, at Half-past Five o'clock in the Afternoon.

FARES—Inside, 5s; Outside, 3s 6d.

SHORT FARES.

FROM LIVERPOOL.	1st Class	2d Class	FROM MANCHESTER.	1st Class.	2d Class.
	s. d.	s. d.		s. d.	s. d.
Wavertree Lane.....	1 6	1 0	Cross Lane.....	1 6	1 0
Broad Green.....	1 6	1 0	Eccles.....	1 6	1 0
Roby Gate.....	1 6	1 0	Patricroft & Reed's Farm..	1 6	1 0
Huyton Gate.....	1 6	1 0	Bury Lane.....	2 0	1 6
Kendrick's Cross Gate...	2 0	1 6	Kenyon Junction.....	2 6	2 0
Top of Sutton Incline...	2 6	2 0	Park Side.....	3 0	2 0
Bottom of Ditto.....	2 6	2 0	Newton Bridge.....	3 0	2 6
Collins Green.....	2 6	2 0	Viaduct.....	3 6	2 6
Viaduct.....	3 0	2 6	Collins Green.....	3 6	2 6
Newton Bridge.....	3 0	2 6	Bottom of Sutton Incline.	3 6	2 6
Park Side.....	3 0	2 6	Top of Ditto.....	4 0	2 6
Kenyon Junction.....	3 6	2 6	Kendrick's Cross Gate...	4 0	3 0
Bury Lane & Reed's Farm	4 0	2 6	Huyton Lane Gate.....	4 6	3 0
Patricroft.....	4 6	3 0	Roby Lane Gate.....	4 6	3 6
Eccles.....	5 0	3 6	Broad Green.....	5 0	3 6
Cross-lane Bridge.....	5 0	3 6	Wavertree Lane.....	5 0	3 6