

MODERN RAILROAD FACILITIES.*

BY WM. BARNET LE VAN.

HISTORY.

Eighty years ago, Oliver Evans, who deserves at this day all the honor that can be conferred on man as one of Philadelphia's noblest sons, made the first application in the streets of this city of steam to a carriage in America, and, in fact, the first locomotive engine. This experiment was more successful than any that had preceded it.

About this time, Evans publicly stated that "The time will come when people would travel in stages, moved by steam engines, from city to city, almost as fast as birds fly—fifteen or twenty miles an hour—passing through the air with such velocity, changing the scene in such rapid succession, and with the most exhilarating exercise. *A steam carriage will set out from Washington in the morning—the passengers will breakfast in Baltimore—dine in Philadelphia, and sup in New York the same day.*"

"To accomplish this, two sets of railways will be required, laid so nearly level as not to deviate more than two degrees from a horizontal line—made of wood or iron, or smooth paths of broken stone or gravel, with a rail to guide the carriages, so that they may pass each other in different directions, and travel by night as well as day." It is a singular coincidence that Evans should have made one of the first experiments in propelling a carriage by steam in the very city destined to become, in the course of fifty years afterwards, the head centre of one of the most important railroads in the world—"The Pennsylvania."

The Fastest Railroad Trains in the World.—As there has been considerable discussion of late as to which road runs the quickest trains, I have collated from the different time tables and other sources the best time made, that the community at large may know what is being done both at home and abroad. England stands first, both as to the number and the quickest runs, as follows:

* A paper read at the Stated Meeting of the Franklin Institute, Wednesday, December 17, 1884.

A Summary of the Fastest Trains in the World.

Name of Road.	Between	Distance in miles.	Time. H. M.	Running average.	Number of trains.
Baltimore and Ohio.....	Baltimore and Washington.....	40	45	53 $\frac{3}{4}$	2
Manchester, Sheffield and Lincoln.....	Manchester and Warrington.....	16	18	53 $\frac{3}{4}$	16
Great Western.....	Paddington and Swindon.....	77 $\frac{1}{2}$	1:27	53 $\frac{1}{2}$	4
Great Northern.....	Hitchin and Peterborough.....	44 $\frac{1}{2}$	50	53	1
".....	Grantham and Doncaster.....	50 $\frac{1}{2}$	58	52 $\frac{1}{4}$	1
".....	Grantham and London.....	105 $\frac{1}{2}$	2:04	51	2
".....	Grantham and York.....	82 $\frac{1}{2}$	1:39	50	2
North Western.....	Northampton and Willesden.....	60 $\frac{1}{2}$	1:10	51 $\frac{3}{4}$	1
".....	Rugby and Willesden.....	77 $\frac{1}{2}$	1:32	50 $\frac{3}{4}$	1
Midland.....	Liverpool and Stockport.....	37 $\frac{3}{4}$	45	50 $\frac{3}{4}$	4
".....	London and Kettering.....	72 $\frac{1}{4}$	1:27	49 $\frac{1}{2}$	1
".....	Bedford and Kentish Town.....	48	1:00	48	10
".....	Leicester and St. Pancras.....	99 $\frac{1}{2}$	2:07	47	1
North Eastern.....	York and Darlington.....	41 $\frac{1}{2}$	53	50	1
Caledonian.....	Carlisle and Beattock.....	39 $\frac{3}{4}$	48	49 $\frac{3}{4}$	1
".....	Carlisle and Carstairs.....	73 $\frac{1}{2}$	1:31	48 $\frac{1}{2}$	1
Bound Brook.....	Trenton and Bound Brook.....	27 $\frac{1}{2}$	31	50	1
".....	Jersey City and Philadelphia.....	59.4	1:52	47.9	2
".....	Philadelphia and New York.....	90.4	2:00	45.2	2
Pennsylvania.....	German town Junction and Jersey City.....	84.3	1:44	49.4	2
".....	Philadelphia and Jersey City.....	89.7	1:53	47.1	2
".....	Philadelphia and New York.....	90.7	2:00	45.2	2
North British.....	Pilmont and Cowairs.....	23 $\frac{1}{2}$	29	48 $\frac{1}{2}$	1
Great Eastern.....	Lincoln and Spalding.....	38 $\frac{1}{2}$	47	48 $\frac{1}{2}$	3
Glasgow and Western.....	Carlisle and Dumfries.....	33 $\frac{3}{4}$	42	45	1
Brighton.....	London Bridge and Brighton.....	50 $\frac{1}{2}$	1:05	46 $\frac{1}{2}$	1
Chatham and Dover.....	Herne Hill and Dover.....	74 $\frac{1}{2}$	1:36	46 $\frac{1}{4}$	1
South Eastern.....	London and Dover.....	74 $\frac{1}{2}$	1:39	45	2
Berlin and Cologne.....	.....	404	9:00	47.1	1

Manchester, Sheffield and Lincoln.—This railway runs the greatest number of fast short distance trains in the world, numbering sixteen daily, between Manchester and Warrington, a distance of sixteen miles in *eighteen minutes*; running time 53.3 miles an hour. Fourteen of the above miles are practically level. None of these are very heavy trains, and their punctuality is excellent.

Great Western.—This line is unique in its track, which is broad gauge (seven feet) from Paddington to Penzance—mixed gauge as far as Exeter—and most of its system is laid with *longitudinal* sleepers, the same as in use on our city passenger railways. It has the smoothest running track in the world, and the speed between Paddington and Swindon is the highest of any long run in England.

For years this road was far ahead in speed, the flying trains known as "Dutchman," running just as they do now about twenty years ago. In fact on June 13, 1846, an experimental trip was made by the new locomotive, "The Great Western." The train weighed one hundred tons. The train started from Paddington and arrived at Dietcot in fifty-four minutes; distance fifty-one miles, or at the rate of fifty-six miles an hour.

This company runs four express trains to Exeter, a distance of 194 miles, at the rate of $46\frac{1}{2}$ miles an hour; the distance between Paddington and Swindon, 77 miles, is run in *one hour and twenty-seven minutes*, or at the rate of $53\frac{1}{5}$ miles an hour. (The two afternoon trains are called "Zulu," because they began to run the day after the Prince Imperial of France was killed—the two morning ones are the "Dutchman.") The running average of the four Plymouth trains, *between Exeter and Paddington*, is as high as $50\frac{1}{3}$ miles an hour (distance 194 miles), and the distance between Taplow and Swindon, which is very smooth and level, the 55 miles is covered within the hour, but as the speed is so uniform it does not attract the attention of the passengers, and they are surprised if they undertake to time it with their watches.

Great Northern.—The most of the trains on this road are very long, but they are run at very high speed with unusual punctuality. In 1880 this road ran four express trains to Leeds, which covered the distance between Grantham and Wakefield, 70 miles, in *seventy-eight minutes*, or on an average of 53.8 miles an hour, which is slightly faster than the Swindon trains above mentioned; for some reason these trains have been discontinued. Now, on Sundays, the 5.00 P. M. runs from Hitchin to Peterborough, 44.25 miles in *fifty minutes*, or an average of 53 miles an hour. This road also runs trains between Grantham and Doncaster, $50\frac{1}{2}$ miles in *fifty-eight minutes*, or an average of 52.25 miles per hour every day. This road has forty-nine long runs, averaging $73\frac{3}{4}$ miles at a running average of *fifty miles* per hour. The longest run is made from King's Cross, London, to Grantham, $105\frac{1}{2}$ miles in *two hours and four minutes*, running average of 51 miles an hour.

London and North Western.—This is the oldest established railway company in England, and does the largest business, it being the first built and has the lightest grades, but in point of speed is far behind other companies. The train carrying the Irish mail to Holyhead, from Euston Station (London), over this line, and dubbed years ago "The Wild Irishman," has now sunk into comparative obscurity with its rate of 42 miles an hour. Its fastest trains are between Northampton and Willesden a distance of $60\frac{1}{4}$ miles, which is covered in *seventy minutes*, an average of $51\frac{2}{3}$ miles per hour, also between Rugby and Willesden, $77\frac{3}{4}$ miles, is covered in *ninety-two minutes*, or an average of $50\frac{1}{2}$ miles per hour. There are twenty trains between Liverpool and Manchester, distance $31\frac{1}{2}$ miles, in *forty-five minutes*, averaging 45 miles an hour.

*English Long-distance Train.—North Western Limited Mail.
(Third Class.)*

Between	Miles.	Time.	Miles per hour.
Euston .....(leave)		8:50	45
Rugby	82¾	10:40	
		10:44	45
Tamworth,	110	11:20	
		11:24	45½
Stafford.....	133½	11:55	
		11:59	44½
Crewe.....	158	12:32	
		12:38	46¾
Wigan.....	191	1:24	
		1:30	40
Preston.....	209¼	1:53	
		1:57	40.6
Carlisle.....	299¼	4:10	
		4:18	48½
Carstairs	372¾	5:53	
		6:00	36
Holytown Junction.	389	6:27	
		6:29	—
Coatbridge.....	393¼	6:37	
		6:40	40½
Larbert.....	409	7:03	
		7:07	—
Stirling.....	417¼	7:21	
		7:24	40
Perth (ticket station).....	450½	8:13	
		8:15	39½
Perth..... (leave).....		9:05	
		9:55	32
Forfar.....	482¾	9:69	
		10:28	37
Bridge of Dun.....	498¼	10:29	
		11:37	
Aberdeen (ticket station).....	540¼	11:40	

Actual miles per hour.....36.4 Actual running miles per hour.....41.8

French Long-distance Train.—Paris, Lyon and Méditerranée.
(“First Class Only.”)

Between	Miles.	Time.	Miles per hour.
Paris.....		8:55	36
Montereau.....	49	10:17	
		10:20	41½
Laroche.....	96½	11:28	
		11:31	41¾
Tonnerre.....	122¼	12:08	
		12:33	39½
Dijon.....	195½	2:24	
		2:29	42
Macon	273¾	4:21	
		4:26	34½
Lyon.....	314¾	5:37	
		6:08	40
Valence.....	383¾	7:51	
		7:56	42½
Avignon	460¾	9:45	
		9:50	38¾
Marseilles.....	536	11:47	
Actual miles per hour.....36		Actual running miles per hour.....39¾	

Midland.—This road is remarkable for very high speed, although it has very heavy grades to contend with. It, like the Pennsylvania Railroad, is noted for its energy in developing “through” services and the opening up of branch lines connecting with its own. The scenery on this line also, like the Pennsylvania, is grand, including some of the loveliest views in England.

A celebrated writer in England suggests that this road “should run a car with projecting glass sides and cheap fares, for factory hands, to see the sights there are between Leeds and Carlisle.” Observation cars, such as are run by the Pennsylvania Railroad in this country, between Altoona and Cresson, would answer a better purpose. The views between Derby and Manchester are grand, and the panorama seen from the Westmoreland heights as you “spin” along down grade, at 70

miles an hour, are beyond description. The locomotives of this road, like those on the Pennsylvania, have nearly one-third of their time occupied in ascending very steep grades, but they accomplish their task well. The highest point on this road being 1,015 feet above the sea. There are four trains run between Liverpool and Stockport, $37\frac{3}{4}$ miles in *forty-five minutes*; running average $50\frac{1}{3}$ miles an hour, and one between St. Pancras (London) and Kettering, $72\frac{1}{4}$ miles in *eighty-seven minutes*, running time 49.8 miles an hour, and between Bedford and Kentish-Town 48 miles in *one hour*.

North Eastern.—This line is more noted for dividends than fast running, from the fact of easy grades. It has the most comfortable equipment of trains in England, and with all, the most “democratic.” Its *third class cars* are so inviting that even a “dude,” entering by mistake, has been known to travel from York to Newcastle without loss of respectability. This company is also “democratic” enough to “honor America’s invention in regard to *brakes*; almost every train, on a small branch, has the Westinghouse automatic.” The excursion rates on this line are the lowest in England. The train between York and Darlington, a distance of $44\frac{1}{4}$ miles, is run in *fifty-three minutes*, an average of 50 miles an hour. From York to Newcastle, $80\frac{1}{4}$ miles is covered in *one hour and forty-two minutes*, running average $47\frac{1}{5}$ miles per hour. This line mounts up to 1,369 feet above the sea, on Stainmoor, where it crosses the boundary of Yorkshire and Westmoreland. This is the highest passenger route in England, and has more romantic and beautiful views than any others. These abound either on the sea-coast, from Flamborough to Berwick, or along the valleys.

Great Eastern.—This line, like the North Eastern, has fitted all its trains with the Westinghouse brake. This line follows the curve of the east coast, and is thus continually crossing (little) transverse valleys; the greatest height between Colchester and Yarmouth is only about 125 feet above the sea, near *Westerfield*.

The best long distance run is between Norwich and Doncaster, 163 miles (seaside express), in *three hours and thirty-five minutes*, a running speed of $47\frac{1}{2}$ miles an hour. The fastest run is made between Lincoln and Spalding, $38\frac{1}{4}$ miles in *forty-seven minutes*, averaging $48\frac{3}{4}$ miles an hour.

London, Brighton and South coast.—Brighton being the Long Branch of England, and formerly the residence of the king of England, who, according to an act of Parliament must live within

fifty miles of London. This has been the means of making the place a popular resort. The expresses on this road, like all running to sea-side resorts, have very heavy trains.

The best run between London Bridge and Brighton, $50\frac{1}{2}$ miles, is covered in *sixty-five minutes*, an average of 46·6 miles an hour.

London, Chatham and Dover.—This line deserves great credit for the spirited way in which it runs over its hilly route. The 74 miles between Herne Hill and Dover is covered in *one hour and thirty-six minutes*, an average of $42\frac{1}{4}$ miles an hour.

London and South Western.—This line is almost level to *Basingstoke*, and gets steeper as it goes west. There are three expresses and thirteen long runs, averaging $47\frac{1}{2}$ miles. The *longest* and quickest is from Yeovil Junction to Exeter 48·5 miles in *sixty-three minutes*, an average of 46·6 miles an hour.

South Eastern.—This line has steep grades except where the line runs between Tunbridge Junction and Ashford, nearly at sea level, and quite straight for 20 miles. The distance by Cannon street, London and Dover, $74\frac{1}{2}$ miles, is covered in *ninety-nine minutes*, or at the rate of 45 miles an hour.

Scotch Lines.—There are three Scotch companies that run fast express lines, and they do this over a line beset with grades.

Caledonian.—This line runs fast expresses, but owing to the steep grades of unusual length, the running average is below the former lines. If a passenger wishes to see what 70 miles an hour means, he can on this line readily be satisfied, and nowhere better than here ascertain how little compensatory effect a speed of *seventy* miles an hour, down a grade of $\frac{1}{75}$, can have in making good the loss of time going *up* the other side. On this line, between Carlisle and Beattock, 39·75 miles, are covered in *forty-eight minutes*, averaging $49\frac{3}{4}$ miles an hour, and between Carlisle and Carstairs, by the Limited Mail, 73·5 miles is spanned in *ninety-five minutes*, or an average of 48·5 miles an hour.

North British.—This line runs the Midland (England) expresses between Edinburgh and Carlisle, and also runs a local express of its own between Edinburgh and Glasgow. Between Polmont and Cowlairst, a distance of 23·5 miles, is covered in *twenty-nine minutes*, or at the rate of 48·6 miles an hour; and between Carlisle and Edinburgh 98·25 miles is run in *two hours and twenty minutes*, averaging 42 miles an hour.

Glasgow and South Western.—This line is a much easier one than

the two former, the highest point reached being only 625 feet above the sea. The Midland (England) cars are run by this line between Glasgow and Carlisle; and between Carlisle and Dumfries, a distance of 33 miles, is run in *forty-two minutes*, or an average of 47 miles an hour; between Dumfries and Kilmarnock, $58\frac{1}{2}$ miles, in *one hour and eighteen minutes*, or at the rate of 45 miles an hour.

Berlin to Cologne.—By the Lehrte route, stopping for dinner at Hanover, viz., Hanover and Stendal. The distance from Berlin to Cologne by this route is 404 miles, and is spanned in *nine hours*, or an average of 47.1 miles an hour.

Fastest English Long-distance Train.—(East Coast Route.)

	Miles.	Hours. Minutes.	Miles per hour.
Glasgow.....(leave).....		8:40	
Cowlairs.....	$1\frac{1}{2}$	8:46	
		8:48	$45\frac{1}{2}$
Polmont Junction.....	25	9:19	
		9:20	42
Haymarket }	46	9:50	
Edinburgh, } (Waverly Station).....	$47\frac{1}{4}$	9:52	
		9:55	
		10:00	46
Berwick.....	$104\frac{3}{4}$	11:15	
		11:20	47
Newcastle.....	$171\frac{1}{2}$	12:45	
		12:50	45
Darlington.....	$207\frac{1}{2}$	1:38	
		1:41	$49\frac{1}{6}$
York (refreshments).....	$251\frac{3}{4}$	2:35	
		3:05	50
Grantham.....	$334\frac{1}{4}$	4:44	
		4:50	$48\frac{3}{4}$
King's Cross (London).....	$439\frac{3}{4}$	7:00	

The *North British* Company runs these trains between Glasgow and Edinburgh, the *North Eastern* between Edinburgh, and the *Great Northern* between York and London.

This time table is the fast express known as the "Flying Scotsman," which also leaves King's Cross (London) at 10 A. M., stops an hour for dinner at York, and reaches Waverly Station, in Edinburgh, at 7 P. M., distance $439\frac{3}{4}$ miles.

Average miles per hour from King's Cross to Edinburgh, 48, and Edinburgh to Glasgow being 47 miles per hour.

*French Fast Long-distance Train.—Paris, Orleans, Tours, Bordeaux.
(First Class.)*

Between	Miles.	Time.	Miles per hour.
Bordeaux (Bastide).....(dep.).....		7:50 } 8:21 }	42
Libourne.....	21¾		
Coutras.....	31¾	8:23 } 8:39 }	37½
Angoulême.....	82¾	9:50 10:15	44½
Ruffec.....	112	10:56 10:59	42½
Poitiers.....	153	11:55 12:00	44
Chatellerault.....	173¾	12:30 12:32	40½
St. Pierre des Corps.....	215½	1:30 1:35	43¾
Blois.....	248½	2:20 2:22	44
Les Autrais.....	285	3:10 3:15	45½
Etampes.....	324	4:07 4:10	45½
Paris.....	359¾	4:56	45½
<hr/>			
Actual miles run per hour.....39½		Actual running miles per hour.....43¾	

AMERICA.

Baltimore and Ohio Railroad.—This road, in times gone by, has marked many an epoch in railroad history, and, as the first passenger railroad in the world, has ever been in the lead in important steps forward. Building its own locomotives, which for half a century have been accorded the highest place in America, with its grand motive-power, and superb equipment throughout, it makes the fastest short distance time in the United States, and second to none abroad.

This road, on its Baltimore and Washington line, forty miles long, covers the distance in *forty-five minutes*, being at the rate of 53·3 miles per hour. There are also four trains spanning the distance in *fifty minutes*, averaging 48 miles an hour.

Philadelphia and Reading Railroad, Bound Brook Division.—This road follows next in order. This line runs a train to and from New York and Philadelphia in *two hours*, including the ferrying across the North River at the former place. The distance between the cities is by this route 90·4 miles, *via* Ninth and Green streets. This distance is covered in the above time, an average of 45·2 miles per hour. The train time between Philadelphia and Jersey City, including four stops, and one change of locomotive, is *one hundred and twelve* (1 hour and 52 minutes) *minutes*, distance 89·4 miles, is run at the rate of 47·93

miles per hour; and between Trenton and Bound Brook, 27.1 miles, is covered in *thirty-one minutes*, or an average of 50 miles an hour. There are a few really fine bits of running on this line. The writer has several times averaged *seventy miles* an hour for five successive minutes from Skillman east, this portion of the road being straight for a distance of 14 miles. The alignment of this line is very favorable, none of the curves exceeding two degrees between Jenkintown and Jersey City.

Pennsylvania Railroad, New York Division.—This line also runs a train from Philadelphia to New York, distance 90.7 miles, in two hours, making one stop, including ferryage at New York, averaging 45.4 miles an hour. Between Philadelphia and Jersey City, 89.7 miles, including one stop, the time is *one hour and fifty-three minutes*, averaging 47.1 miles an hour; and between Germantown Junction and Jersey City 84.3 miles is covered in *one hour and forty-nine minutes*, or at a rate of 49.4 miles an hour.

This route is unfortunately a continuous series of curves and re-curves, ninety in number, varying from one degree (5,730 feet) to nine degrees (636 feet radius) radius.

With all these drawbacks, the Pennsylvania Railroad Company every day accomplish a speed of nearly *fifty miles an hour*, passing over the number of curves before stated, whose total curvature would describe over ten complete circles.

But in long distance runs the Pennsylvania Railroad stands first in the world. The New York and Chicago Limited train covers the the distance between the two cities, 912.2 miles, in *twenty-six and one-half hours*, including the ferryage at New York and eight stops which occupy *sixty-six minutes*, being an average running time of 36.18 miles per hour. From Chicago to Fort Wayne, a distance of 148 miles, is covered in *four hours*, an average of 37 miles an hour.

In fact, there are no such distances yet run in Europe as across the American continent by the Chicago limited. By this train the most luxurious traveling in the world is done, besides the speed is the fastest of any long distance train. This train is made up and composed exclusively of drawing-room, dining-room, smoking-room and sleeping cars, the baggage and kitchen composing one car. The sleeping car charge and "extra fare" are represented in the one "extra fare" ticket. No half "extra fare" tickets are sold; children between five and twelve years of age being required to purchase whole "extra fare" tickets, in connection with half-fare passage tickets. Extra fare tickets

include a double berth in sleeping car or seat in section of same. A double berth will hold two persons; a section contains two double berths, and a drawing-room contains two double and two single berths. Two persons desiring to occupy the same berth will be charged one and one-half the extra fare. At least one passage ticket and one extra fare ticket will be required for each double berth occupied.

The Fastest Long-distance Train in the World.—New York and Chicago Limited.

Between	Miles.	TIME.				
		Hours.	Minutes.	Minutes lost in ferriag & stops.	Minutes.	Miles per hour.
New York City (Eastern time).....		A. M.				
		9·				
Jersey City.....	1·	9·08	8			
Jersey City.....		9·15	7			
Philadelphia (Broad Street Station)..... {	89·7	11·14				
		11·25	11	119		45·4
Harrisburg..... {	105·2	P. M.				
		2·05				
		2·10	5	160		39·49
Altoona..... {	131·6	5·35				
		5·40	5	205		38·46
Pittsburg..... {	116·7	9·00				
(Central time).....		8·17	17	200		35·
Alliance..... {	83·	11·07				
		11·12	5	170		29·26
Crestline..... {	106·	A. M.				
		2·27				
		2·30	3	195		32·6
Fort Wayne..... {	131·	6·				
		6·05	5	210		35·9
Chicago.....	148·	10·30		265		33·33
Totals.....	912·2	26·30	1·06	25·24		289·44
Average miles per hour.....						36·18

The dining cars are on the western plan, not restaurant cars. *Table d'hôte* meals are served at the fixed price of \$1, from bills of fare, representing all the substantials and delicacies of the season, which can hardly be matched in the country for cleanliness, juiciness and variety. The smoking-room cars are supplied with easy chairs and lounges, instead of stiff pews. You can take a seat in a rattan chair made deep and with soft cushions, or take your place at a writing desk on which is paper printed with the name of the Limited Express, and with a library of books above you, and be waited upon by a wag of a black porter, who will bring in drinks of any kind, cigars and lunch, with cards and card tables at hand. A trip across the continent in one of these trains is a luxury fit for a king, and just the thing to rest a wearied merchant or official, the landscape passing so rapidly and the time made in general with great thoroughness.

Fastest Long-distance Runs in the World.—Arranged According to Distance.

Name of Road.	Between	Miles.	H. M.	Running Average.	Train.
Pennsylvania.....	Chicago and Ft. Wayne.	148	4:04	36'4	} New York & Chicago, Limited.
".....	Altoona and Harrisburg	132	3:20	39'5	
".....	Pittsburg and Altoona.....	117	3:15	36	
Great Northern (Eng.).....	Grantham and King's Cross.....	105½	2:05	51	Fast Express
Midland ".....	St. Pancras & Leicester.....	99¼	2:07	47	fr Manchester
Paris, Lyon and Méditerranée.....	Laroche and Dijon.....	99	2:41	37	Down Scotch Express.
North British.....	Carlisle and Edinburgh.	98¼	2:20	42	7:15 fr'm Paris
Midland.....	Derby and Liverpool.....	91½	2:04	44¼	1st class only.
".....	Skipton and Carlisle.....	86¾	1:55	45'2	Night Expr's.
London & N. Western.....	Preston and Carlisle.....	90	2:10	41½	12 N. from St. Pancras.
London & N. Western.....	Chester and Holyhead.....	84½	2:	42¾	Night Expr's.
London & N. Western.....	Rugby and Euston.....	82¾	1:50	45	One each way
Great Northern.....	Grantham and York.....	82½	1:39	50	One each way
North Eastern.....	New Castle and York.....	80¼	1:42	47½	One each way
London, Chatham & Dover.....	Victoria and Dover.....	78	1:45	44½	One each way
South Eastern.....	Cannon st. and Dover.....	74½	1:39	45	One each way
North Western.....	Rugby and Willesden.....	77¼	1:32	50½	
Pennsylvania.....	Ger'n Jun. & Jersey City	84'3	1:44	49'4	One each way
Great Western.....	Paddington & Swindon.....	77	1:27	53½	Two each way
Caledonian.....	Carlisle and Carstairs.....	73½	1:35	48'5	Limited Mail.
London & N. Western.....	Carlisle and Carnforth.....	62¾	1:25	44¼	"
Midland.....	Bedford & Kentish Town	48	1:00	48	"
Paris, Orleans, Tours, Bordeaux.....	Ruffec and Poitiers.....	41	0:56	44	All Manchester Exp'ses.
Paris, Orleans, Tours, Bordeaux.....	Les Aubrais & Etampes.	39	0:52	45½	First class.
Baltimore and Ohio.....	Baltimore and Washington.....	40	0:45	53½	One each way

Passengers paying so unusual a rate, are as a general thing, more

exacting than first-class passengers ordinarily. The company expecting this, special notice is given to all the company's people to be considerate and patient with the passengers. This train leaves New York at 9 A. M. (eastern time), and reaches Chicago at 10:30 A. M. (central time) the next day. Returning it leaves Chicago at 4:51 P. M. (central time), and reaches New York at 7:30 P. M. (eastern time) the next day. The above time table will show how the run is made :

It will be seen by this table that the speed in America, both for short and long distance runs, is second to none obtained elsewhere.

The *average* speed in this country in long runs does not quite equal the English, but it must be remembered that our roads have heavier grades and *more* curves, the latter being of smaller radii than is allowable on England and French roads. Then, again, the law of England gives the railroad companies exclusive right over their tracks and anyone trespassing thereon is liable to fine and imprisonment. When the law in this country steps in, as in England, we will be able to far surpass her. I have been told that we are running fast enough, but speed is a means to an end, the greater the expedition compatible, with safety, the more benefit will be derived by all parties. I am, every day, also asked if there is not more danger in the running of fast trains than with slow trains. As for *safety*, the safest line is the one which is the best managed, but the one which runs the most and fastest trains, is obliged to be the best managed ; thus, those who prefer *slow* trains must yet acknowledge their debt to fast trains.

Railroad mortality statistics of England and some parts of the Continent of Europe have been compiled and published in France, from which it appears that the greatest fatality occurs on the French railways :

The French Railroads kill, annually, one in every.....							2,000,000
"	English	"	"	"	"	"	..... 5,250,000
"	Belgian	"	"	"	"	"	..... 9,000,000
"	Prussia	"	"	"	"	"	.....21,500,000
"	French	"	wound,	"	"	"	..... 500,000
"	English	"	"	"	"	"	..... 750,000
"	Belgian	"	"	"	"	"	..... 9,000,000
"	Prussia	"	"	"	"	"	..... 4,000,000

Roundly speaking, French railways kill five times as many as English. English not quite twice as many as Belgian, and Belgian nearer thrice than twice as many as Prussian, which are much the least fatal of the four.