

**DOCUMENTS TENDING TO PROVE  
THE SUPERIOR ADVANTAGES  
OF RAIL-WAYS AND STEAM  
CARRIAGES OVER CANAL  
NAVIGATION**

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Documents tending to prove the superior advantages of rail-ways and steam carriages over canal navigation by John Stevens

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**JOHN STEVENS**

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DOCUMENTS

TENDING TO

PROVE THE SUPERIOR ADVANTAGES

OF

RAIL-WAYS

AND

STEAM CARRIAGES

OVER

CANAL NAVIGATION.

John Stevens

NEW-YORK:  
PRINTED BY T. & J. SWORDS,  
NO. 100 PEARL-STREET.  
1812.

REPRINTED BY STANFORD & SWORDS, 137 BROADWAY.  
1852.



## PREFACE.

The Pamphlet, here reproduced forty years after its first appearance, will now, in the light of its fulfilled and realized speculations, be read with a degree of interest and admiration which, at the period of its publication, it failed to attract.

Having, while recently preparing a paper on the growth of the city of New-York during the last half century, been led into some investigations as to the pioneers in the construction of steamboats and railroads, and remembering something of a pamphlet about railroads, published many years before, by Col. Stevens, of Hoboken, I long sought for a copy of it, and at last, one was found among the bound pamphlets of the New-York Society Library.

Upon being informed of its existence, the sons of the ingenious author obtained permission to have it copied, determining to reprint it in honor of their distinguished father, and they placed the MS. in my hands for that purpose.

It seemed altogether fitting that the direct successors of the publishers, who had given the original to the world, should be invited to print this edition: and accordingly it bears the impress of *Stanford & Swords*, 137 Broadway, 1852, as its original bore that of *T. & J. Swords*, 160 Pearl St., 1812: thus marking at once perpetuity and change.

Of the author of this pamphlet, Col. John Stevens, of Hoboken, a fitting memorial is yet to be written, for he was, emphatically, a benefactor of his country and his race. Born to affluence, his whole life was devoted to experiments, at his own cost, for the common good.

Mr. Stevens was a native of this city, where he was born in the year 1749. His grandfather, John Stevens, a native of England, came to the colony of New-York, in —, as one of the Law Officers of the Crown. His father, John Stevens, became a resident of New Jersey, and married Elizabeth Alexander, descended from one of the original proprietors of New Jersey, and was himself much in public stations there—and for a time Vice President of the Council.

John Stevens, of whom we are treating, though born in this city, was a Jersey man by residence, and eventually by his marriage with Rachael Cox, daughter of John Cox, of Bloomsbury, N. J., who also

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for many years was Vice President of the Council of that State. Mr Stevens himself was for several years Treasurer of the State.

Mr. Stevens' attention was first turned, or rather the bent of his genius was developed and directed, towards mechanics and mechanical philosophy, by the accident of seeing, in 1787, the early, and as now may be said imperfect steamboat of John Fitch, navigating the Delaware river. He was driving in his phaeton on the banks of the river, when the mysterious craft, without sails or oars, passed by; Mr. Stevens' interest was excited—he followed the boat to its landing—familiarized himself with the design and the details of this new and curious combination, and from that hour became a thoroughly excited and unwearied experimenter in the applications of steam to locomotion on the water, and subsequently on the land.

Having been brought, by close family connection, into intimacy with Robt. R. Livingston, (the Chancellor of this State, who married the sister of Col. Stevens,) he induced Mr. L. to join him in these investigations, and they were persevered in at great cost and with little immediate success till Chancellor Livingston, in 1801-2, was sent as minister to France.

So much however was the Chancellor encouraged by the experiments then made, that as early as 1798 he obtained from the Legislature of New-York, an exclusive grant for the use of steam on the waters of New-York. This, however, became forfeit by the failure to avail within the limited time of its privileges.

But previously to the Act of '98 the Legislature of New-York had, as early as 1787, granted successively to *James Rumsey* and to *John Fitch* the exclusive right to navigate the waters of the State with steam propelled vessels; and on 9th January, 1789, John Stevens petitioned the Legislature for a like grant—nothing having resulted from the preceding ones. Mr. Stevens in his petition says that, "to the best of his knowledge and belief, his scheme is altogether new, and does not interfere with the inventions of either of the other gentlemen who have applied to your honorable body for an exclusive right of navigating by means of steam." The petitioner adds that he had "made an exact draught of the different parts of his machine, which, with an explanation thereof, he is ready to exhibit." The prayer of the petition was unsuccessful; but these draughts should be among the papers of the late Col. Stevens, and at this day would be curious.

Mr. Stevens, meanwhile, never renounced his experiments nor despaired of success, and in 1804 he actually constructed a *propeller*, (a

small open boat, worked by steam,) with such decided success that he was encouraged to go on and build the *Phenix*, steamboat, on his own plan and model, and had her ready almost contemporaneously with, but a little after, the first steamboat of Fulton, the *Clermont*. The *Clermont* entitled Mr. Fulton and Chancellor Livingston, who was co-operating with Fulton, to the benefit of the law, which had been revived by the State of New-York, granting a monopoly of the waters of the State, and thus Mr. Stevens' steamboat was excluded from those waters. On the Delaware, however, and on the Connecticut he placed boats; and his eminent son, Robt. L. Stevens, having embraced his father's views, was now at work with him to improve the known, and invent new resources for accelerated steam conveyance.

In 1812, just before the commencement of the war with England, and when this State was first addressing itself to the thought of connecting the waters of the lakes with those of the ocean by the Hudson, a thought, very rapidly matured in the sequel, by the delays and now incredible cost in transporting troops, artillery and munitions during the war from the sea-board to the lakes, Col. Stevens put forth the pamphlet here reproduced, urging that rail-roads and steam-carriages should be preferred to canals and canal boats.

At that day not a *locomotive* existed in the world—and the only railroads were those few, and short *tram-roads*, as they were called in England, connecting for the most part coal mines with canals, or other water transportation, and upon which carriages with the ordinary wheels turning upon their axle-trees were drawn by horses. The carriages were prevented from running off sideways by a flange rising some inches above the outer edge of the flat rail. In this state of knowledge and experience of railroads it was that, in 1812, Col. Stevens made public, in the following pamphlet, his extraordinary and most sagacious views and accurate calculations respecting, not only the feasibility of applying steam to locomotion on land, but the precise mode of such application: its cost, and its almost illimitable advantages. It seems all but impossible to realize the fact, when carefully reading his description of the rail-way, of the locomotive—of its wheels made fast to the axle, and revolving not *on* but *with* it, and held by flanges on the inner periphery, from flying off at a tangent, of a whole train, or "suit," as he calls it, of rail-way carriages, "all firmly attached to each other, and pursuing the same direction:" and of the possible speed they might attain of 40 or 50 miles an hour, but that probably "it would in practice be found convenient not to exceed 20 or 30 miles an hour;" it seems, I re-



pest, almost impossible to realize the fact that, at that day no locomotive existed except in the creative and ingenious mind of the writer; and that no railroad, such as he needed for his unrevealed plan, had ever been laid down.

If he had seen then, what he lived to see afterwards, and from the handiwork and genius mainly of his son Robert on the Camden and Amboy Railroad, the spectacle, ever impressive, however frequently witnessed, of long trains of cars sweeping on with the rapidity of the pigeon's flight, he could not have described with more absolute accuracy all the details of such a train, such a road, and such a locomotive, than is done in the prophetic pamphlet of 1812.

He was treated as a "visionary projector." Time has vindicated his claim to the character of a far-seeing, accurate, and skilful practical Experimentalist and Inventor; and who can estimate, if at that day, acting upon the well considered suggestion of President Madison, "of the signal advantages to be derived to the United States from a general system of internal communication and conveyance," Congress had entertained Col. Stevens' proposals, and after verifying, by actual experiment upon a small scale, the accuracy of his plan, had organized such a "general system of internal communication and conveyance;" who can begin to estimate the inappreciable benefits that would have resulted therefrom to the comfort, the wealth, the power, and above all to the absolutely impregnable union of our great Republic and all its component parts?

All this, too, Col. Stevens embraced in his views; for he was a Statesman as well as an Experimental Philosopher; and whosoever shall attentively read this pamphlet will perceive that the political, financial, commercial and military aspects of this great question were all present to Col. Stevens' mind; and he felt that he was fulfilling a patriotic duty when he placed at the disposal of his native country, these fruits of his genius.

The offering was not accepted. The THINKER was ahead of his age; but it is grateful to know that he lived to see his projects carried out, though not by the government—and that, before he finally in 1838, closed his eyes in death, at the great age of 89, he could justly feel assured that the name of *Stevens*, in his own person and that of his sons, was imperishably enrolled among those which a grateful country will cherish.

I will detain the reader no longer from the pamphlet.

*Col. Coll., New-York, May, 1852.*

CHAS. KING.

## INTRODUCTION.

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The following documents on a subject calculated, I should suppose, to attract public attention, are committed to the press from an estimation of their importance, and from a conviction of the practicability of the proposed improvement. On a subject of such deep interest to the community at large, I presume no apology will be necessary for the liberty I now take of laying before the public private communications.

Had the subject matter of this publication been exhibited to public view in the shape of an entire and connected essay, written expressly for the purpose, numerous repetitions and inaccuracies, both in style and matter, would not have occurred. But, I am inclined to believe, that the desultory manner in which it is now handled, and the unavoidable repetitions necessarily resulting therefrom, will render it more generally impressive.

Although my proposal has failed to gain the approbation of the Commissioners for the improvement of inland navigation in the State of New-York, yet I feel by no means discouraged respecting the final success of the project. The very objections their committee have brought forward serve only to increase, if possible, my confidence in the superiority of the proposed railways to canals.

So many and so important are the advantages which these States would derive from the general adoption of the pro-

posed railways, that they ought, in my humble opinion, to become an object of primary attention to the national government. The insignificant sum of two or three thousand dollars would be adequate to give the project a fair trial. On the success of this experiment a plan should be digested, "a general system of internal communication and conveyance" adopted, and the necessary surveys made for the extension of these ways in all directions, so as to embrace and unite every section of this extensive empire. It might then, indeed, be truly said, that these States would constitute one family, intimately connected, and held together in indissoluble bonds of union.

Should the national government be induced to make an appropriation to the amount above stated, an experiment could soon be made, either in the vicinity of this city, or at Washington, as may be deemed most expedient.

But the attention of the general government is urged more imperatively to this object, from the consideration of its great national importance in a fiscal point of view. If any reliance can be placed on the calculations I have made, the revenue which this mode of transportation, when brought into general use, would be capable of producing, would far exceed the aggregate amount of duties on foreign importations. However extravagant this position may at first sight appear, I contend it is capable of the strictest demonstration. It is an indisputable fact, that the aggregate amount of internal commerce is vastly greater than that of external commerce.

But one half of the latter, viz., exports, are by the constitution exempted from the payment of duties; the other half, foreign imports only, are subject to the payment of duties.

The far greater part of domestic commerce consists of bulky articles, many of which *now* pay fifty per cent. on