

JOHN FRANK STEVENS

PRESENTATION
OF THE
JOHN FRITZ GOLD MEDAL

TO
JOHN FRANK STEVENS

BY THE
JOHN FRITZ MEDAL BOARD OF AWARD

REPRESENTING THE

**American Society of Civil Engineers
American Institute of Mining and Metallurgical Engineers
American Society of Mechanical Engineers and the
American Institute of Electrical Engineers**

**MONDAY EVENING
MARCH 23RD, 1925**

**ENGINEERING SOCIETIES BUILDING
29 WEST 39TH STREET
NEW YORK**

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**THE CERTIFICATE
ACCOMPANYING THE
JOHN FRITZ MEDAL
PRESENTED TO
JOHN FRANK STEVENS**



THE JOHN FRITZ MEDAL

ESTABLISHED BY THE PROFESSIONAL ASSOCIATES AND FRIENDS OF JOHN FRITZ
OF BETHLEHEM, PA., U.S.A., AUGUST 21ST 1902, HIS EIGHTIETH BIRTHDAY, TO PERPETUATE
THE MEMORY OF HIS ACHIEVEMENTS IN INDUSTRIAL PROGRESS

THIS CERTIFIES THAT THE MEDAL FOR THE YEAR
1925

HAS BEEN AWARDED TO

JOHN F. STEVENS

FOR

GREAT ACHIEVEMENTS AS A CIVIL ENGINEER, PARTICULARLY IN PLANNING AND ORGANIZING FOR THE CONSTRUCTION
OF THE PANAMA CANAL; AS A BUILDER OF RAILROADS, AND AS ADMINISTRATOR OF THE CHINESE EASTERN AND
SIBERIAN RAILWAYS

THE JOHN FRITZ MEDAL BOARD OF AWARD

Charles Rand CHAIRMAN

Red Mills SECRETARY

MEMBERS OF THE BOARD BY WHICH THIS AWARD WAS MADE

AMERICAN SOCIETY OF CIVIL ENGINEERS

Arthur P. Davis
George S. Webster
John N. Freeman
Charles F. Loweth

AMERICAN SOCIETY OF MECHANICAL ENGINEERS

W. M. McFarland
W. F. M. Goss
Fred J. Miller
Henry B. Sargent

AMERICAN INSTITUTE OF MINING ENGINEERS

B. B. Thayer
Herbert Hoover
Charles F. Rand
Arthur S. Dwight

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS

A. W. Beresford
William M. Clellan
Frank B. Jewett
Harris J. Ryan

TO YOU
SPECIAL

THE JOHN FRITZ MEDAL

THE JOHN FRITZ MEDAL was established in 1902 in honor of John Fritz, of Bethlehem, Pennsylvania. The medal is of gold, is awarded not oftener than once a year, and is accompanied with an engraved certificate. This certificate states the origin of the medal, cites the specific achievement for which the award is made, and bears the names of the members of the Board by which the medal was awarded and the signatures of the President and Secretary of the Board.

The Board of Award is formed of sixteen men, four representatives from each of the four national societies of Civil, Mining and Metallurgical, Mechanical, and Electrical Engineers.

The members of the Board for 1924, which made the award to John Frank Stevens, were:

American Society of Civil Engineers

Arthur P. Davis	John R. Freeman
George S. Webster	Charles F. Loweth

American Institute of Mining and Metallurgical Engineers

B. B. Thayer	Charles F. Rand
Herbert Hoover	Arthur S. Dwight

American Society of Mechanical Engineers

W. M. McFarland	Fred J. Miller
W. F. M. Goss	Henry B. Sargent

American Institute of Electrical Engineers

A. W. Berresford	Frank B. Jewett
William McClellan	Harris J. Ryan

COMMITTEE OF ARRANGEMENTS, 1925

JOHN R. FREEMAN, *Chairman*
ARTHUR S. DWIGHT
W. F. M. GOSS
FRANK B. JEWETT



THE MEDALISTS

The first award of the medal was made to John Fritz at a dinner given to him on his eightieth birthday, August 21st, 1902.

The other awards have been as follows:

- 1905, to Lord Kelvin for his work in cable telegraphy and other scientific attainments;
- 1906, to George Westinghouse for the invention and development of the air brake;
- 1907, to Alexander Graham Bell for the invention and introduction of the telephone;
- 1908, to Thomas Alva Edison for the invention of the duplex and quadruplex telegraph, the phonograph, the development of a commercially practical incandescent lamp, the development of a complete system of electric lighting, including dynamos, regulating devices, underground system, protective devices and meters;
- 1909, to Charles T. Porter for his work in advancing the knowledge of steam engineering and in improvements in engine construction;
- 1910, to Alfred Noble for notable achievements as a Civil Engineer;
- 1911, to Sir William H. White for notable achievements in Naval Architecture;
- 1912, to Robert W. Hunt for his contributions to the early development of the Bessemer process;
- 1913, no award;
- 1914, to Professor John E. Sweet for his achievements in machine design, and pioneer work in applying sound engineering principles to the construction and development of the high-speed steam engine;

- 1915, to Dr. James Douglas for notable achievement in mining, metallurgy, education, and industrial welfare;
- 1916, to Dr. Elihu Thomson for achievement in electrical invention, in electrical engineering and industrial development, and in scientific research;
- 1917, to Dr. Henry M. Howe for his investigations in metallurgy, especially in the metallography of iron and steel;
- 1918, to J. Waldo Smith for achievement as engineer in providing the City of New York with a supply of water;
- 1919, to General George W. Goethals for achievement as builder of the Panama Canal;
- 1920, to Orville Wright for achievement in the development of the airplane;
- 1921, to Sir Robert A. Hadfield for the invention of manganese steel;
- 1922, to Charles Prosper Eugene Schneider for achievement in metallurgy of iron and steel, for development of modern ordnance, and for notable patriotic contribution to the winning of the Great War;
- 1923, to Senator Guglielmo Marconi for the invention of wireless telegraphy;
- 1924, to Ambrose Swasey for achievement as a designer and manufacturer of instruments and machines of precision, a builder of great telescopes, a benefactor of education, and the founder of Engineering Foundation;
- 1925, to John Frank Stevens for great achievements as a Civil Engineer, particularly in planning and organizing for the construction of the Panama Canal; as a builder of railroads, and as administrator of the Chinese Eastern and Siberian Railways.

JOHN FRANK STEVENS

JOHN FRITZ MEDALIST, 1925

HONORS FROM GOVERNMENTS

Distinguished Service Medal, United States

Officer of the Legion of Honor of France

Second Class Order of the Rising Sun, Japan

Order of Chia Ho (Golden Grain), China, highest civil decoration

Order of Wen Hu (Striped Tiger), China, highest military decoration

Czechoslovak Military Cross

HONORARY MEMBER

American Society of Civil Engineers

Association of Chinese and American Engineers

Northwestern Society of Engineers

DOCTOR OF LAWS

Bates College

CHAIRMAN

U. S. Commission of Railway Experts to Russia

PRESIDENT

Inter-Allied Technical Board

JOHN FRANK STEVENS was born at West Gardiner, Maine, April 25, 1853. He attended the common school and the State Normal School. Like half the medalists, he got his education outside of college. His first engineering experience was with a firm of engineers at Lewiston, but the West soon drew him away from Maine. In 1874 and 1875 he was rodman on the staff of the City Engineer of Minneapolis. Two years he was on railway surveys in Texas; the two following years, assistant engineer on the Denver and Rio Grande Railroad, and in 1880-81, locating engineer on the Chicago, Milwaukee and St. Paul.

From 1882 to 1885 Stevens was with the Canadian Pacific Railway, but in 1886 returned to the Milwaukee. Two years followed as principal assistant engineer in locating and building the Duluth, South Shore and Atlantic Railway from Sault Ste. Marie to Duluth. Early in 1889 he became locating engineer of the Spokane Falls and Northern Railway. Later the same year he entered the service of the Great Northern Railway as principal

assistant engineer. In 1893 he was assistant chief engineer, in 1895 chief engineer, and in 1902 general manager, also. For this railway his two outstanding services were the discovery of the Marias Pass, the best railroad pass across the Rocky Mountains, and the building of the Cascade Tunnel, 13,873 feet long. In 1903 he became chief engineer of the Chicago, Rock Island and Pacific Railway, and the following year its Second Vice-President.

In 1905 Mr. Stevens was appointed chief engineer of the Panama Canal. In February, 1907, he was made Chairman of the Isthmian Canal Commission; he resigned in April. Arriving on the Isthmus July 26, 1905, he found chaos, due to many conditions not yet mastered. He left marvelous order, expressed in effectiveness, economy, healthfulness and loyalty. The decision had been made to build the canal with locks. An organization had been built up and equipment procured for rapid construction.

From 1907 to 1909 Mr. Stevens was Vice-President of the New York, New Haven and Hartford Railroad, in charge of operation; 1909 to 1911, President of the Spokane, Portland and Seattle Railway, the Oregon Trunk Railway, and the Pacific and Eastern Railway. From 1911 to 1917 he was in consulting practice in New York City, engaged in railroad affairs.

To help Russia in response to request of the Kerensky government, the United States sent a commission of railway experts in May, 1917; Mr. Stevens was its Chairman. He spent six years in Russia, Japan and Manchuria, becoming in 1919 President of the Inter-Allied Technical Board, with headquarters at Harbin, Manchuria. The commission made recommendations for increase of effectiveness of the great railway systems stretching 5500 miles from Kola Bay across Europe and Asia to Vladivostock. Amidst revolution, disease and famine, Mr. Stevens and a band of devoted American railway men of all ranks operated the crippled railways and kept open "the back door to Russia." By this means the Czech army, cut off by the collapse of the Russians, was enabled to fight its way out and complete its journey around the world to re-enter the war on the western front. For six years his constructive response to calls to service in those troubled places in Asia was a great service to country and mankind.

Mr. Stevens returned to the United States in 1923 and is making his home at Southern Pines, at North Carolina.

REMARKS OF THE PRESIDING OFFICER

—
JOHN RIPLEY FREEMAN

Member, John Fritz Medal Board of Award; Chairman, Committee of Arrangements, 1925; Past-President, American Society of Civil Engineers, Past-President, American Society of Mechanical Engineers.

JOHN FRITZ

The older generations of engineers need no explanation of the origin of the John Fritz Medal, but since this medal was instituted twenty-three years ago, a new generation of engineers has been born and has come into practice.

To those of us of the older generation who knew John Fritz personally, of whom a considerable number are present to-night, this medal always will have the deepest significance. It brings affectionate memories of one who was by common consent the foremost American steel master of his time, and at the same time was one of the most kindly and lovable of men, a grand example of steadfast integrity in thinking and in workmanship. This medal was instituted for the purpose of carrying onward the memories of this grand man, who, at eighty and at ninety years of age, had the courage of youth in his heart, and in seventy years of activity had achieved much for the good of his fellowmen. Also, the medal was established as a means by which American engineers could signalize year by year the great achievements of others in engineering and in industry.

To the younger generation in particular I would say a few words more about John Fritz. He was born August 21, 1822, and died on February 13, 1913, in his ninety-first year. At sixteen years of age he was apprenticed to a blacksmith in a country machine shop, and with the old idea of the journeyman shifting from one shop to another, he sought to learn every branch of the ironworker's art.

At thirty-two years he became superintendent of the Cambria Steel Company. Three years later he invented and, against much opposition, put into practical use there the three-high mill for rolling railroad rails. This was revolutionary in its large increase of output as also in improvement of product and paved the way for the Bessemer process that came a few years later.

In 1860, when thirty-eight years old, he became superintendent at Bethlehem. In 1868, he began the Bessemer plant at Bethlehem and was one of the small group of loyal friends who brought to success the process for making good Bessemer steel railroad rails from American ores. In 1872, he was a pioneer in the introduction of the open-hearth process in America; he also was the pioneer in the manufacture of armor plate. He was a pioneer in the hydraulic forging of large shafts in America. For fifty years his wise and kindly counsel aided in the vast expansion of the iron and steel industry in America.

John Fritz's steadfast desire to be useful to his fellow-men is shown by his founding at the age of eighty-seven the Engineering Laboratory at Lehigh University, in the building and fitting up of which he was his own architect, and sought to give it outlines, arrangement, lighting and ventilation appropriate to its purpose.

In 1890, at the age of eighty-nine, at the request of many friends, he wrote his autobiography. It is one of the most inspiring books of its kind that I have ever read. I wish it might be in every college fraternity house in our country and in the public library in every industrial city because of the high purpose that it teaches while relating in simple language the steadfast aim of doing well all that his hand found to do. It is a valuable history of the early developments of the steel maker's art in America.

John Fritz was active until nearly ninety years of age. One of his latest benefactions was the erection of a beautiful church and parsonage in memory of his father and mother and in recognition of his lifelong adherence to the Christian faith they taught him.

THE MEDAL AND ITS AWARDING

This John Fritz medal, founded upon his eightieth birthday, of which he was the first recipient in 1902, has come to be recognized as the highest mark of appreciation that American engineers can give "for notable scientific or industrial achievement." I shall not read the whole list of the famous men who have re-

ceived it. This list includes George Westinghouse, Alexander Graham Bell, Thomas Alva Edison, Alfred Noble, James Douglas, Elihu Thomson, and others. Its recipients have not been confined to America; the second to receive it was Lord Kelvin, and four years ago a group of twelve past high officers of the four American national engineering societies made a special journey to England and France to take the medals awarded in two successive years to Sir Robert A. Hadfield, the steel master of Sheffield, who, in recognition of his scientific achievements, also is a member of the Royal Society, and to Charles Prosper Eugene Schneider, the head of the great Creusot Works and foremost steel master of France.

It may interest you to know how the candidates are selected. They are chosen on behalf of the four national engineering societies of America, Civil, Mining and Metallurgical, Mechanical, and Electrical, by a board of sixteen, four delegates from each society. The Board asks for nominations. An affirmative vote of three-fourths is required for the awarding of the medal, which may not be awarded oftener than once a year; and it can be awarded to no one whose eligibility has not been under consideration for a full year.

STEVENS AT PANAMA

I should say a word, too, about the recipient of the medal this evening, for I have known him more than twenty years, and for the past eighteen years, knowing how he brought order into chaos and organized a peaceful army of 30,000, and planned the work as no one else in the world could have planned it and set all going efficiently, I have regarded him as the real builder of the Panama Canal.

I have made three visits to the Isthmian Canal as a member of engineering boards and I had many friends among the rank and file of the engineering corps on the Isthmus, some of whom told me many things which never got into the books or into the newspapers. I happened to be at Panama when the transfer from the civil to the military authorities took place and could but feel the sorrow that was in the air at having Stevens leave the grand corps that he had been leading; and I recall the statement made to me at that time by Colonel Goethals about the esteem and affection in which Mr. Stevens was held by every one on the

Isthmus. He said, "I never have seen so much affection displayed for any man, and if I can so carry things on as to build up a similar feeling, when I get through, it will be the proudest work of my life."

I myself wondered just how such a strong feeling had been developed. Soon after this transfer from civil to military was made, I traveled for several weeks on the Isthmus from one camp to another, picking up what information I could about the general situation as well as about engineering features. I recall asking the division engineer at Bas Obispo cut, "How is it that Mr. Stevens has this marvelous hold on all you men here?" He replied, "Well, Mr. Freeman, it is this way: Mr. Stevens comes around to my division once each week or ten days. I have learned the 'old man's' ways pretty well; so I let him look around by himself for a little while; then when I see out of the corner of my eye that it is the right time for me to draw up alongside, I do so. He will want to know why I put that steam shovel over there, and why I have this drilling gang over here, and the reason for everything. Finally he will say, 'What are your plans for next week?' I tell him. He will ask me why, and after I have explained, perhaps say, 'Now, if I were in your place, I would do it this way,' and picking up a spike he will sketch out a plan of operation on the side of a shack; but when he goes away he always says, 'Hartigan, you are the boss here, and I am going to let you do just as you think best, and in a week I will be around again, and perhaps we can then see whether your way or my way is best.' When a man treats you that way, haven't you just *got to do* the very best you can?"

LETTERS OF APPRECIATION

We expected some others here to-night who knew intimately of some of the accomplishments of our medalist, but instead they have sent regrets. First, I have a letter from the French Ambassador, who presents his compliments and expresses his regrets at not being able to be present.

Next I have a letter from the Chinese Minister, saying that owing to a previous engagement he is unable to attend, and also saying, "I cannot, however, allow this opportunity to pass without voicing my admiration for the achievements of Mr. Stevens as an engineer. He has left monuments of his achievements in

all parts of the world. A more worthy recipient for the John Fritz medal can hardly be named."

A letter from the Japanese Ambassador says, "I am very anxious to be present on the occasion of the award of the John Fritz medal to Mr. Stevens. . . . I regret exceedingly that a previous engagement with our Consul General prevents me from being present on that happy occasion. May I ask you to be good enough to extend to Mr. Stevens my heartfelt congratulations upon the distinction he is about to receive."

From the Minister of the Czecho-Slovak Republic: "I hasten to express to you my cordial thanks for your invitation and at the same time express my exceeding regret at my inability to accept. I wish you and Mr. Stevens all success."

From General Goethals: "I sincerely regret that I am unable to attend the dinner in honor of John F. Stevens, as my engagements necessitate my absence from the city. On this occasion may I express my pleasure at the well deserved tribute that is being paid to Mr. Stevens, and extend to him through you my hearty congratulations."

I have a letter here from one who was in the closest relation with Mr. Stevens, William Howard Taft, Past-President of the United States, Secretary of War at the time Mr. Stevens was on the Isthmus, and now Chief Justice of the United States Supreme Court. (See page 50.) I have other letters but shall not attempt to read them all. There is, however, one that I must read. This is a letter to Mr. Stevens from the Associated Veterans of the Russian Railway Service Corps. (See page 53.)

Introducing MR. RALPH BUDD

We are fortunate in having with us to-night one who was with Mr. Stevens on the Isthmus as his right-hand man in railway operation, and who has succeeded to great responsibilities in managing one of the extensive railroad systems that Mr. Stevens helped to build in the Northwest. I have great pleasure in introducing to you a man whom Mr. Stevens describes as "one of his boys," Mr. Ralph Budd, President of the Great Northern Railway.

Introducing HONORABLE ROLAND S. MORRIS

I am sure that all those here are satisfied that the Board has made no mistake in the selection of the recipient for this year's

medal; but you have heard only half the story. I have great pleasure in presenting to you a man who can tell you the other half. I heard a little of it myself years ago, when I was in China. I happened to be in Tientsin and Peking while Mr. Stevens was in Harbin, in control of thousands of miles of railroads, engaged in the task of keeping open the back door of Russia.

From high Chinese officials, from Americans, and from a Russian general who was my fellow passenger, I heard only glowing words of praise for the marvelous accomplishments of John Frank Stevens.

I take great pleasure in introducing the Honorable Roland S. Morris, formerly United States Ambassador to Japan.

Introducing MR. CHARLES F. RAND

The rules of the John Fritz Medal Board of Award stipulate that only one medal shall be given in any one year. I think you have all had ample reason given to you why we should have awarded three medals, all to Mr. Stevens.

I shall ask the Chairman of the Board which made the award for 1925 to say a few words and deliver the medal to Mr. Stevens. I present Mr. Rand.

ADDRESS
BY
RALPH BUDD

President, Great Northern Railway Company; Member, American Society of Civil Engineers.

The services of the man whose achievements receive merited recognition to-night have been in the field of engineering as applied to transportation, and in the broader field of international diplomacy. It is my privilege and my pleasure to review some of his activities in the former; others qualified to do so will treat of the latter.

RAILROAD CONSTRUCTION ERA

The importance of a railroad from the Mississippi to the Pacific had become so generally recognized by 1853 that in March of that year Congress ordered surveys and reports on three routes, a southern, a central and a northern. So exactly does this movement for western railroads coincide with the life of the medalist that on the day of his birth, the survey parties were being organized. The northern route was in charge of Isaac I. Stevens. How John F. Stevens later consummated the work begun by Isaac is a part of the fascinating parallelism of the lives of these two men of the same surname, but, I believe, unrelated by blood. Isaac I. Stevens, too, was a great engineer, a Government servant, and a diplomat. As the first and greatest Governor of Washington Territory, he made some of the most important Indian treaties in our history.

Although the country was alive to its need of railroads, the intervention of the Civil War checked much actual construction until about 1870. The period of greatest activity was from 1876 to 1893, the very years when John F. Stevens was in the field locating lines, or in charge of construction. So it is strictly the truth to say that his life is contemporary with the era of railroad expansion, and that the period of most intensive railroad building in the world's experience is coincident with that period in his life when he was actively engaged in railroad field work. During those eighteen years, over 105,000 miles of line were built in the United States, or 40 per cent. of all the railroad mileage in the country to-day.

From 1876 to 1880, Mr. Stevens rose from instrument man to locating engineer, and his work took him from the plains of Texas to the mountains of Colorado. Two years as locating engineer on the Chicago, Milwaukee & St. Paul in Iowa

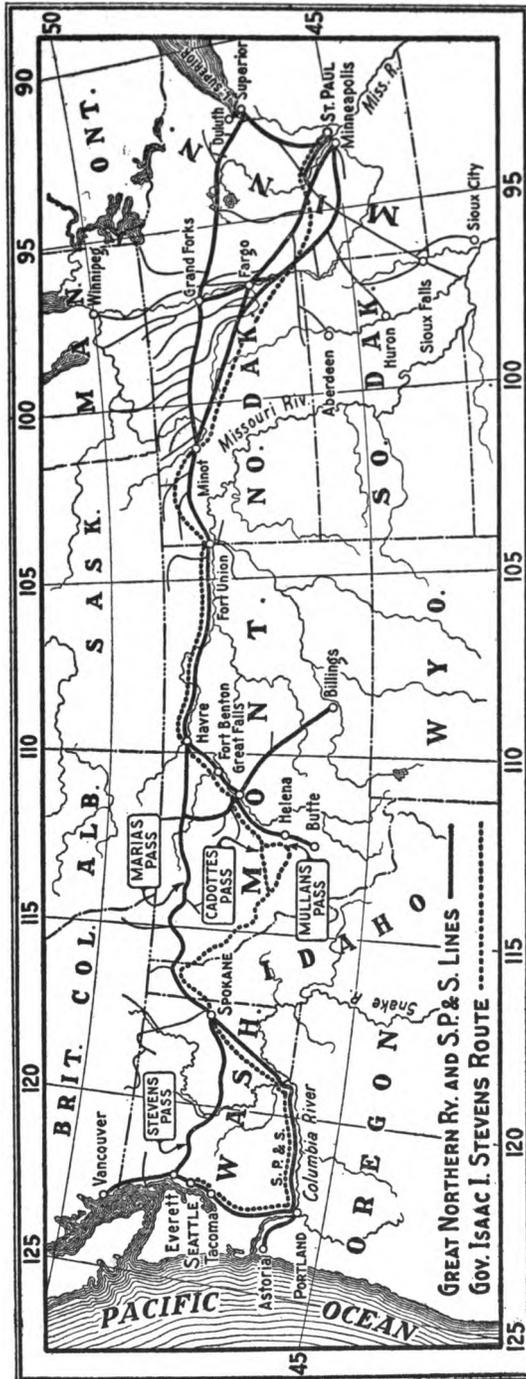
followed; and should any one harbor the delusion that skill of the highest order is not required to secure the best location east and west across that State, let him study its natural drainage system. The many streams running generally from north to south occupy deep, wide valleys, all of which must be crossed nearly at right angles. There is hardly a more difficult problem of railroad location than that presented by these rolling prairies.

From 1882 until 1885, Canadian Pacific construction claimed his attention. Here he added the experience of actual building to that of locating, having charge for the contractors during the latter half of that time. A variety of conditions was encountered, the Manitoba prairies, the rugged Selkirk Mountains, and the lake country of the upper Columbia. Another year on the Chicago, Milwaukee & St. Paul in charge of construction on the Kansas City line, and we find him, in 1887 and 1888, Principal Assistant Engineer in full charge of locating and building the Duluth, South Shore & Atlantic from Sault Ste. Marie to Duluth.

He had now been through twelve years of intensive campaigning. From Texas to Canada, and from the Great Lakes to the Rockies and beyond, he had taken part in the great drama of railroad construction that was being staged. Thus was wrought the foundation and background for his later brilliant career.

OPPORTUNITY WITH JAMES J. HILL

During this period a new figure had appeared in the railroad world, whose influence was to be dominating and whose activities were to merge with those of our honored guest. That figure was James J. Hill. His importance to us on this occasion is that he had a theory of transportation which, up to then, had been little honored or practiced, but was as sound as it was novel. It was, that the way to succeed in that business was to build and maintain a railroad which, with the least outlay, would serve the largest possible territory, and serve it best and most economically. New capital must be attracted solely by the operating showing made. The success of his venture rested upon the sound judgment with which the lines were laid out and built, and upon their most efficient operation. Economical operation, in turn, was conditioned upon the best loca-



MAP OF GREAT NORTHERN RAILWAY SYSTEM
 Showing Marias Pass through the Rocky Mountains and Stevens Pass through the Cascade Range

tion and construction as to gradients, alignment, distance, cost, and the nature and needs of the country to be served. This constituted a recognition of the economics of railway location not previously accorded, and created an unexcelled opportunity for a man with the particular attainments of John F. Stevens at that time.

For eight years Mr. Hill had been rounding out and strengthening his system by building up a network of lines in the fertile and rapidly settling state of Minnesota and in the Red River Valley of North Dakota. His eyes were turned to the Orient, and his heart was set on pushing his rails across the plains, over the mountains, and through the valleys that lay between, westward to the Pacific. In 1887 and 1888 the road was extended to Great Falls, Helena and Butte, across what was then unproductive and all but hostile Indian country.

From what was then known of the Rocky Mountain passes, it was thought that the line would have to go about as far south as Helena or Butte to cross the mountains, but if a pass should be found farther north and, therefore, in more direct line westward, the road to Great Falls, Helena, and Butte would still be a necessary and important line. Business from these and other communities and the products of the coal and metal mines of those localities, together with the 2,000 miles of profitable road in Minnesota and North Dakota, maintained the stability of the system, which, by 1889, had grown to 3,000 miles, and gave a supporting base of operation for large construction. The time had now come for the drive to the Coast.

ROCKY MOUNTAIN RECONNAISSANCE

Railroad reconnaissance, on the scale then undertaken in major mountain ranges and far from the bases of operation, called for more courage, physical strength and perseverance than any other work which an engineer was required to perform. With these must be combined thorough familiarity with frontier and Indian life, technical skill and training in determining what gradients and alignment the country afforded, and sound judgment as to the cost of building, together with a sense of location and direction which amounted almost to instinct. The necessities of the times brought forth a numerous group of engineers who, to an extraordinary degree, possessed all of these attain-

ments. In this remarkable company John F. Stevens was an outstanding figure; to him, early in 1889, was assigned the task of locating the line across the mountains.

Every expedition that had crossed the northern Rockies, beginning with that of Lewis and Clark in 1805, had used passes at the headwaters of the Jefferson or Dearborn rivers in the vicinity of Butte or Helena. The trail (later known as the Mullan Highway), which passed near the present site of Helena, was reasonably safe and easy. The Missouri River could be used as far up as Fort Benton, near Great Falls, making the overland portage, or carry, shorter than by any other route; it also avoided the warlike Blackfeet Indians, who occupied the country to the north. Journals of overland travelers of the pre-railroad period universally show that the whole country north of the Missouri River, in what is now Montana, was avoided because of the hostility and ferocity of that tribe.

A less thorough or less courageous engineer would have accepted the general locality of Helena as the most available for crossing the Rockies, as it had been accepted almost without question for eighty years, and would have located the Pacific extension of the Great Northern through some feasible outlet known to exist in that part of the mountains. What John F. Stevens did was characteristic of the man, his methods, and his ability.

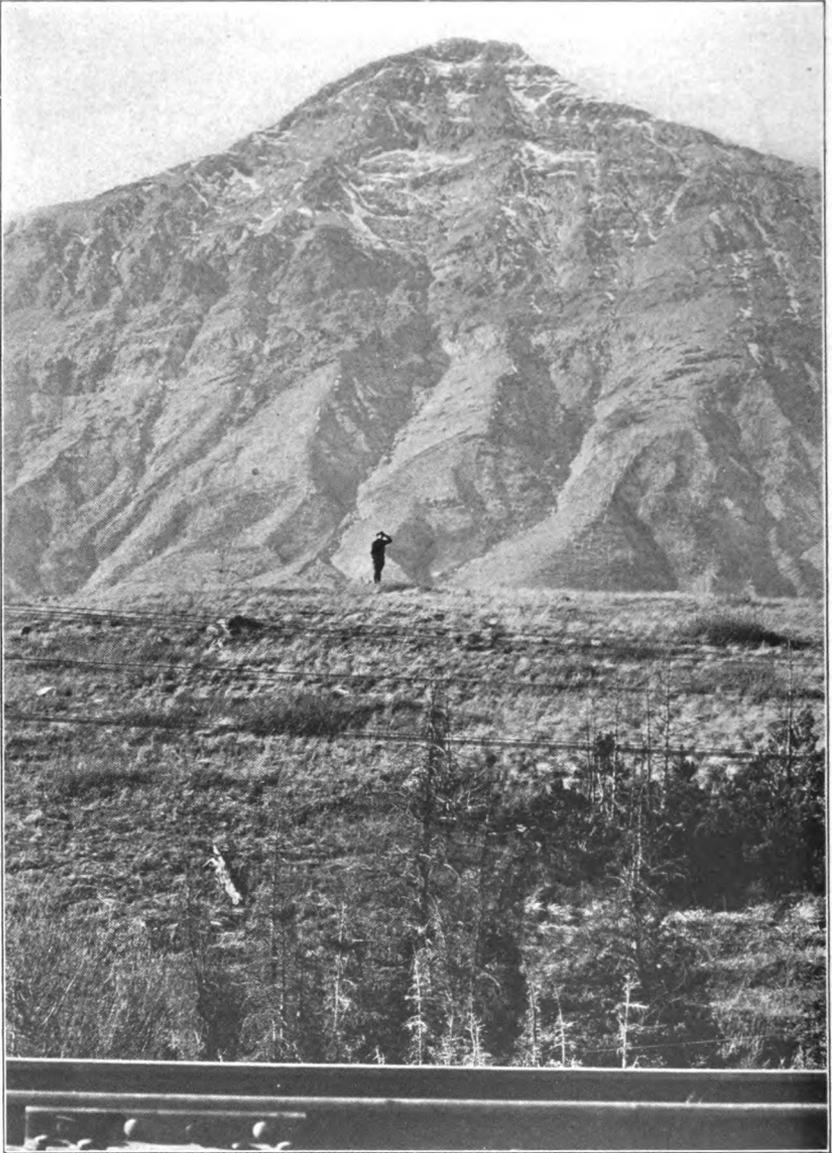
The Great Northern from St. Paul to Helena followed then, as it does now, practically the route recommended by Isaac I. Stevens in his report to the Secretary of War in 1855. But the map showed that although the 900 miles from St. Paul to Havre, Montana, was very direct, the next 300 miles from Havre through Great Falls and Helena to Butte deviated from the direct course, running southwesterly instead of continuing due west, and would not give the line of shortest distance. Isaac Stevens reluctantly accepted this deviation, because the parties he sent in search did not find a feasible route across the mountains farther north. In his official report he says: "Since I have given my attention to the passes of these mountains, I have been greatly impressed with the fact, from the course of the streams and the general deportment of the country, that there must be a good and practicable pass leading from some branch of the Marias; and at this time (1853) I was sanguine

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SUMMIT OF MARIAS PASS THROUGH THE ROCKY MOUNTAINS
Showing Position of Statue of John F. Stevens to be erected
by the Great Northern Railway

that we should find there the best solution of the question of the railroad practicability of the Rocky Mountain Range." Other references are equally significant. In one of them he urges further exploration, which he could not undertake because of the inadequacy of his appropriation. These disappointing efforts of Isaac I. Stevens were made in the year that John F. Stevens was born. Taking up the work thirty-six years later, it is evident that he did not overlook or undervalue the statements of his famous predecessor.

DISCOVERY OF MARIAS PASS

His reconnaissance carried him well into the winter and his persistent search enabled him to report that on December 11, 1889, he had located and surmounted Marias Pass, about 125 miles north of the passes in the vicinity of Helena and on the line of the direct route westward. The thoroughness with which he had covered the country enabled him to say that it was the lowest and best pass across the Rockies in the northern United States. The actual location of the Great Northern through it at an altitude of 5,200 feet, on a one per cent. grade westbound and 1.8 per cent. eastbound, and without a summit tunnel, fully confirmed his report.

On the last lap of the exploration of Marias Pass, he was accompanied only by a half-breed Indian, as no one else would venture into the mountains so late in the year. Carrying their packs on their backs, they had reached a point about five miles from the actual summit when his companion became exhausted and had to be left at camp, if an open fire on ground cleared of two feet of snow can be called a camp. From there he went alone through the pass and far enough to make sure he was in Pacific drainage. Alone that night at the summit, he tramped to and fro to keep from freezing, and in the morning came back to his Indian only to find the fire out and the fellow half frozen. But he got his man back to a settlement in the east foothills of the Rockies, after which he came over one hundred miles to the railroad, and thence to St. Paul with his amazing report. At one stroke the discovery of Marias Pass shortened the proposed line to the Coast by over one hundred miles, afforded far better alignment, much easier grades, and much less rise and fall. In grateful recognition of this service, the Great Northern

Railway has caused an heroic bronze statue of Mr. Stevens, as he then appeared, to be executed by the Sculptor Cecere. It will stand permanently where he spent that memorable night in December, 1889.

STEVENS' PASS AND TUNNEL

The main problem of the Rockies being solved, details of location were left to others, and in 1890, Mr. Stevens "examined every nook and corner of the country between Spokane and Puget Sound, Stampede Pass and the Canadian Line," as he says himself, for the best way through the Cascades. Late in 1890, he found it, above Wenatchee Lake, at an altitude of 3,400 feet. As everyone who has dealt with them knows, the west slopes of the Cascades generally are so steep that extensive development work is necessary in order to obtain a gradient easy enough for railroad operation. At Stevens' Pass, for so it is called in his honor, the range makes no exception to this rule, but drops off without interruption nearly to sea level. The fitting of the line to this rugged mountain side, from 3,000 feet elevation down to 600 feet, was under Mr. Stevens' direct charge. It was his last piece of actual location in the field and it is, indeed, the work of a master.

Descending one hundred feet to the mile, the line loops back and forth along the steep, rough slopes. Requiring some 4,000 feet more of distance to maintain the grade at a point where one mountain side rises almost perpendicularly against another, without room between the walls to make a turn, he solved the problem by bridging the intervening canyon and piercing the hillside with a tunnel, which, after turning 180 degrees, emerges on the same hillside, where, by a second bridge across the same canyon, he landed the line at the desired elevation and place. Scarcely a traveler passes over this piece of road who is not thrilled by the panorama as it spreads out, showing the plan of overcoming the mountain barrier. None can realize how infinitely difficult it was to determine that location in the forest of giant firs that stood there when it was made.

Mr. Stevens remained in the Cascades until track laying was completed through to the Coast, January 5, 1893, a little more than three years after the discovery of Marias Pass. He continued with the Great Northern until 1903, the last eight years

as Chief Engineer of the system and two years as General Manager. Those were busy years. The first line over the Cascades had been by a switchback, but the original location provided for a tunnel 13,873 feet long, which he put through while Chief Engineer.

During the fourteen years of his service with the Great Northern, it grew from a 3,000- to a 6,000-mile system. Through all that time he achieved outstanding engineering feats and by them, as well as by his charm of person, won the utmost confidence and affectionate friendship of James J. Hill, both of which he enjoyed to the last. Many of their mutual trials and triumphs were recounted in later years by Mr. Hill, sometimes, I think, for the force of gentle suggestion and example they held for his hearers.

If anything further were needed to round out Mr. Stevens' experience in preparation for the work at Panama, it was afforded by two years as Vice-President in charge of operation of the Chicago, Rock Island & Pacific. He was called from there by the Government in 1905.

Up to this time he had been intensively engaged practically all of his mature life in the improvement of railroad transportation. Now, he was to direct, during the two years of its crucial, formative period, the prosecution of an undertaking that would benefit the world by improved ocean transportation and aid the national defense by virtually bringing our eastern and western coasts 8,000 miles closer to each other, besides avoiding the hazard of the trip around Cape Horn or through the Straits of Magellan. It was the canal across the Isthmus of Panama.

PIONEER WORK AT PANAMA

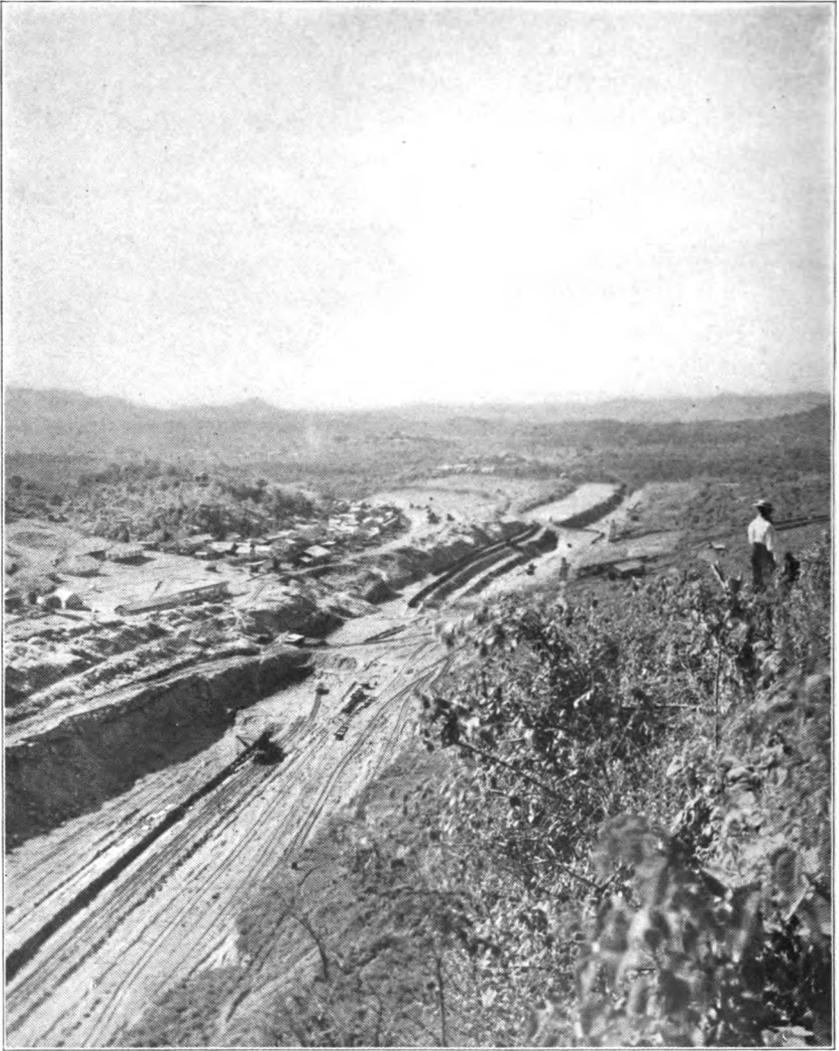
When he took charge in 1905, the work was practically at a standstill, and what organization there was had about lost confidence. The Isthmus was unhealthy and uncomfortable. The rainy season was at its height. The only means of transportation, the Panama Railroad, had practically broken down. It was necessary to make the place not only habitable, but as comfortable and attractive as possible, for the Isthmus had a bad reputation, especially in countries where labor forces were available.

Definite plans for permanent work could not be made until the type of canal had been determined, and that was not settled for a year. There was much, however, that would have to be done whatever kind of canal was built. The obvious need was sanitation. Colonel, afterwards General, Gorgas had investigated the situation and was ready to clean the place up. He only awaited cooperation and support from the Chief Engineer in the way of necessary forces to do the job, and enforcement of regulations to maintain sanitary conditions. He immediately received the fullest measure of such cooperation and support.

A necessary adjunct to sanitation was modern municipal improvements. Water supply, sewers, and street paving had been planned for Panama and Colon, where most of the native population centered. Similar improvements were needed for the Canal Zone towns and camps, which were to be made up largely or wholly of canal employees. The Division of Municipal Engineering was enlarged and that work was speeded up.

The housing question was closely associated with those of sanitation and municipal engineering, and like them could be considered in advance of the decision as to the type of canal. The Building Construction Department was large and active in the early period. Sites for construction camps were selected and laid out jointly by the Sanitary, Municipal Engineering and Building Construction departments.

Next in order, and equally important, was the securing and feeding of the workers. This problem was handled by the Division of Labor and Quarters. The logical source of supply of common labor was from the islands of the Caribbean, where there was an abundance; many semi-skilled employees came from Spain; while skilled and supervisory forces were brought from the United States—an army which at its maximum totaled nearly 40,000. It was not easy to attract labor at the beginning, but as the Isthmus became livable and news of the high wages and good treatment of the Canal employees was carried back to the recruiting grounds, the situation improved and eventually there was a surplus of men. While these preparations were going on, the Engineering Department had laid out much of the work, tentatively, of course, but definitely enough to show that, regardless of the kind of canal, a great deal of machinery and equipment could be provided for. Accordingly



PANAMA CANAL, NEAR EMPIRE
Culebra Cut in early stages of excavation, 1907

it was purchased and much of it actually was in use by the summer of 1906.

LOCK CANAL SELECTED

Meanwhile Congress was considering the two types of canal. There was wide difference of opinion on this question and the success of the undertaking depended upon its being answered correctly. Mr. Stevens strongly favored the lock canal, as recommended by the minority report of the Board of Consulting Engineers. Along with the multitudinous duties just alluded to, he gave a great deal of attention to this question. His influence was potent in having the lock type adopted. This was done on June 29, 1906. Subsequent events have emphasized the wisdom of that decision.

CULEBRA CUT

In the studies of the project that had been made, Culebra Cut loomed up as the greatest single task. One hundred million cubic yards had to be removed from it by steam shovels and trains. So the drive centered on Culebra Cut, or just "The Cut," as it soon became.

I suppose it is literally true that John F. Stevens, when he went to Panama, was better equipped than any man in the world to plan and organize the excavation of Culebra Cut. There may have been other engineers or contractors who had had as many years of experience in heavy railroad construction, but his peculiar experience included a development which, in many particulars, corresponded with the requirements of The Cut. I refer to operations on the Mesabi Iron Range, in Minnesota.

Open-pit mining, as carried on there, involves many of the same problems and is comparable in magnitude with the dry excavation at Culebra. Including the stripping and mining, there had been removed from these mines on the Mesabi Range, during the years 1901 to 1905, an average of 15,000,000 cubic yards annually. This was confined to an area 50 miles long, and while ore is moved an average of 100 miles, material from stripping is wasted near at hand, so that the disposal of the excavated material involved about the same average haul as the work at Culebra. Standing on the edge of the open pit which now comprises the Mahoning and Hull-Rust mines on the Mesabi

Range, and seeing them in operation, one who saw Culebra Cut when the steam shovels were in it is struck immediately with the similarity of the work. Out of these mines, which form one pit two miles long and 200 feet deep, there has been excavated over 100,000,000 cubic yards of material. This pit is typical of many others on the Range. Mr. Stevens was familiar with this whole operation and had taken part in the development of railroad facilities for handling the ore. There can scarcely be any doubt that this experience was drawn upon by him in his Canal work.

At any rate, the problem at Culebra was one of operating a great many steam shovels at one time, so as not to interfere with one another, and disposing of the excavated material promptly and cheaply. Each shovel operation involved much auxiliary plant and equipment. The material to be excavated was so largely rock that drilling and blasting were necessary throughout. The furnishing of power and explosives for this, as well as water and fuel for the steam shovels, and the necessity for keeping the track connections open at all times to serve the shovels with cars made the problem complex, especially in view of the inevitable interruptions that occurred from slides.

The special requirements resulted in special machinery and equipment, based, of course, on those customarily used, but modified to meet the new conditions. For example, steam shovels were equipped with certain especially heavy parts and steel replaced iron to resist the unusual strains; new types of dump cars were developed for handling the large rock as well as the sticky clay, which occurred in many places; the drills were operated by air from pipe lines run in duplicate throughout the length of the Cut; water lines were provided similarly, so that the many units could be supplied from these common sources; later, blasting was done from an electric power line. The multiplicity of these operations presupposes the establishment of numerous machine-shops, compressor plants, electric power plants and storehouses. The plan for working on various levels as the Cut deepened, for shifting tracks and moving shovels with the least delay and keeping them supplied with cars was also worked out in advance with great precision. This was done not so much under Mr. Stevens' direction as by him personally. It was largely a question of railroad transportation.

He had full charge of the Panama Railroad, just as he did of

the Canal, and during his régime, as later, the railroad was made an instrumentality in canal construction wherever it could be used advantageously. It was, in general, parallel with, and close to, the Canal axis, so connections between the railroad and the tracks leading to the Cut were comparatively easy to make. Likewise, the low country traversed by the railroad, except where it crossed the cordillera of the Isthmus, afforded opportunity for disposing of the material excavated from the Cut. Extensive waste banks or dumps for that purpose were established adjacent to the railroad, beyond either end of the Cut, in the Chagres, Rio Grande and other valleys. Much of the material taken from the Cut was brought on to the railroad and then moved to those waste dumps, where it was unloaded outside the future channel or sailing limits of the Canal.

The old Panama Railroad was laid with 60-pound rail on little, round ties hardly larger than fence posts. It had to be strengthened and double-tracked. On some stretches the third and even the fourth track was built as additional shovels were placed in operation necessitating more connections with tracks in the Cut and with the growing waste dumps. At each of these connections there was built more or less of a yard, and as there were some twenty of them in 25 miles, the line, for half its length, took on the aspect of a busy industrial section.

Before the end of 1906, dirt was flying in accordance with an orderly and definite program. With graphs to show the progress desired it became a matter of making or beating the schedule. How the curve of actual performance compared with that showing the forecast was watched with keenest interest by every one. Numerous unofficial charts were kept to show results on special jobs. The output was increased by making more connections with the tracks in the Cut as the levels which were reached permitted. In this way, more shovels were put at work and more dumping grounds were developed as they became necessary. The work having been systematized, attention was given to speeding it up and increasing the efficiency.

PLANS AND ORGANIZATION COMPLETED

Although the Cut was the largest single job, it was only one of the many parts of the work in hand. Plans for those other controlling features—the dam and locks at Gatun—and for the

construction plant to build them, were commenced immediately after Congress decided upon the lock canal. Various other projects likewise were planned so as to fit in with the progress of the whole undertaking. Everywhere throughout the 50-mile extent of the Canal there were works of greater or lesser size and complexity.

All of this was supervised from headquarters in Culebra, where the presiding genius was the medalist of this evening. Quiet and unassuming, but sure and unhesitating, he went about his task. The assemblage represented a multitude of unit operations with each of which he was familiar from years of close acquaintance. The principal novelty was in the size of the Cut and some of the structures, for example, the Gatun Dam and the locks, and in the association of all of the varied types of construction in one vast undertaking, the sum total of which gave the Panama Canal its unprecedented magnitude.

The care with which the plans had been made and the organization created, and the confidence in both are evidenced by the fact that before the end of 1906 the Chief Engineer announced that the Canal could be formally opened by January 1, 1915. Enthusiasm and pride of accomplishment, which is a characteristic of the personnel in every well conducted enterprise, permeated the entire force. It was born of the knowledge that a task of unprecedented magnitude was being done quickly and well. The period of planning and organizing was nearly over by 1907. There is no question but that the work had reached a point where, with able administration, its success was assured, when, in April of that year, Mr. Stevens returned to the States.

The universal regret felt among 30,000 workers of all classes and conditions, when it was known that a change in administration was at hand, is probably the greatest tribute that ever can be paid to his success at Panama. Equally creditable to the organization which he left and to his successor is the fact that the change was effected without appreciable interruption to the work or alteration in the method of procedure.

Upon returning to the States, Mr. Stevens became Vice-President in charge of operation of the New York, New Haven & Hartford Railroad. Later as President of the Spokane, Portland & Seattle and several other western lines of the so-called "Hill System," he built 250 miles and consolidated the companies

owning 1000 miles of railroad in Oregon and Washington. Once more his path was to cross that of Isaac Stevens, for the main stem of the Spokane, Portland & Seattle Railway follows, for nearly 400 miles, the western end of Isaac Stevens' survey of 1853.

INFLUENCE OF CANAL

Nothing so revolutionary in its effect on transportation as the opening of the Panama Canal has happened since railroads replaced the overland trails. Its immediate effect has been one of great advantage to the seaboard communities by bringing them so much closer to each other and to other countries of the world. The zone of influence of these communities has been extended inland from both oceans. One of the great questions of the day is how to avoid injuring other parts of the country while these receive such great benefit. Another effect has been to take away from the transcontinental railroads a substantial traffic eastbound as well as westbound. This has placed upon the traffic, which is left to these railroads, the necessity of supporting them in condition to render adequate public service, and this is a public question of wide importance.

However these questions ultimately shall be settled, the undeniable fact remains that the Panama Canal has given to the world a means of moving goods from one part of it to another with less effort than previously was necessary. To that extent it is a boon, just as it is a boon to locate and build a railroad between two points with lower gradients, less rise and fall, and shorter distance than had been done before. It is in thus avoiding the resistance to be overcome, eliminating the necessity for expenditure of energy, and thereby reducing the work of the world that the medalist has so signally achieved. Whatever may be accomplished by improving locomotive or marine engines, so as to do more work per unit of energy expended, will only emphasize the advantages afforded by these elemental improvements he has wrought. They are among the great permanent contributions of engineers to the world, and for his large part in their accomplishment we are proud to do him honor.

ADDRESS BY

HONORABLE ROLAND SLETOR MORRIS

*United States Ambassador to Japan 1917-1921; Special Lecturer
on International Law at University of Pennsylvania;
Partner, Duane, Morris & Hecksher, Attorneys, of Phila-
delphia.*

A ROMANTIC CAREER

I suppose there has been nothing in the whole world more romantic than the story of the development of our great West in the years that followed the Civil War. We are of the generation that succeeded those men, many of them, who laid down their guns or sheathed their swords after the Civil War. With no expressions of pessimism or disillusionment, such as we sometimes hear after the Great War so recently closed, but with their eyes looking westward, with high spirit and fine vision, they went forth, not only to reunite their country, but also to develop the vast resources of that western land.

I feel, with all in my generation, a sense of envy at the opportunity of romance which they had, when I think of the story of the lives of the engineers, of the miners and of the pioneers who conquered those plains and mountains and extended our American development to the shores of the Pacific. The romance of their lives, I say, seems to me more thrilling than any romances that were depicted in the "Lives" of Plutarch.

Now, among those men, one who might perhaps be called the youngest of the elder generation, is Mr. Stevens. Think of his romantic career! Born and brought up in a homestead in Maine, he quite literally blasted and bridged his way across this continent, and then at a time in life when most men have retired, he sat amid the tombs of the ancient Manchu dynasty, amid the conflicting storms in the two great historic civilizations of Russia and China, casting his eyes still farther westward across the reaches of Siberia to the Ural Mountains. What a story, not only of achievement but also of vision! I wish I were allotted time just to tell this story of those latter days, as it was my privilege as a younger man to watch John F. Stevens in that greatest of all the tasks which he undertook.

It was something to have attempted to master the wilderness by the building of the railroad. As you have heard, it was a supreme achievement, if I may quote from the seal of the Republic of Panama, "To divide the land and unite the world" with the Panama Canal. But how much more difficult it was to go into ancient civilizations in a period of drastic revolution and to present our desire for service to those peoples who were struggling with these tremendous problems! I have not the time in

twenty minutes, to tell the story as I should like; but I have some things that I value this opportunity of saying, just because they happened a long way off.

THE AMERICAN RAILWAY MISSION TO RUSSIA

Russia's breakdown was perhaps more of a railroad breakdown than a breakdown of morale. The Russian Government had planted on that eastern front of the war millions of men with insufficient means of transportation to bring up the supplies and ammunition required to maintain the line. Mobilization had shifted the whole system of food distribution. The load was taken off population centres like Moscow and Petrograd and transferred to the eastern military front; the railroads were not equal to this changed condition and finally broke down. Men lost their morale chiefly because they had no food, and they could not go on fighting without food, as Napoleon had pointed out a century before. So at the time of the Kerensky régime the problem of the railroads in Russia became a vital one, an essential factor in preserving Russia as one of the Allies in the Great War.

In May, 1917, John F. Stevens went to Russia as head of the American Railway Advisory Commission to study this problem, and subsequently was appointed advisor to the Russian Government under the Kerensky régime.

Mr. Stevens brought to that task almost a half-century of continuous engineering work in all parts of the United States and a reputation for executive ability and for judgment that had been won in some of the hardest of the engineering problems that lay before our country in the days of the seventies, the eighties and the nineties. He organized under him the Railway Service Corps. It was the plan that these men should go into Russia by the way of Siberia and assist in the reorganization of the Trans-Siberian and Chinese Eastern railways, which were in a serious state of disorganization. These railways constituted a long line of communication from Vladivostok to Moscow, which was relied upon to carry supplies landed at the port of Vladivostok in order to build up the fallen fortunes of the Russian army. But conditions in Russia proceeded much more rapidly than the plans for railway reconstruction.

The members of the corps went over on transports and arrived

at Vladivostok just as the Bolsheviks took charge of the harbor of Vladivostok. Bolshevism had spread from Moscow fifty-four hundred miles to Vladivostok, largely following the railroad, which is the one link connecting the central and European portions of Russia with the Pacific provinces. The American engineers were compelled to move out of the harbor temporarily, to return to Nagasaki, Japan, and to remain there for several months—until March, 1918—before Mr. Stevens decided that the time was propitious to attempt to reorganize the Chinese Eastern and Trans-Siberian railways for the purpose of keeping open into Russia this one medium of communication through which America could concretely express the interest she had in Russia and its development and render the help which had been promised from the time of Mr. Root's commission. The help demanded was, first, instruction for Russian personnel, and, second, railway materials. But even more than that was it necessary if possible to avert the chaos which would result over the whole Siberian country, possibly extending to Manchuria and China, if the railroad should cease to function. There is probably no place in the world where the community is more dependent on its railroad than along the line from Vladivostok into Manchuria, and then to Harbin, and from Harbin through Western Manchuria and Siberia, past Lake Baikal to Irkutsk, and from Irkutsk continuing far away to the Ural Mountains and beyond. Civilization has been almost exclusively in the territory lying along the railroad.

When I speak of the Trans-Siberian Railway I am speaking of a system which was composed of a series of companies organized by the Russian Government and, prior to the revolution, controlled through the Government. These companies were all concentrated into one system, and, when the revolution came, the whole system fell apart. Its organization went to pieces; yet the roads continued to function after a fashion without operating heads or managers, such was the training, loyalty and devotion of the men themselves.

SERVICE IN SIBERIA AND MANCHURIA

Mr. Stevens felt our engineers were in a position where they could undertake supervision and assist the Russian personnel, thus helping these heroic men to keep the roads open. As there

was no Russian Government in Siberia worthy of the name, our engineers faced a very interesting situation. The Chinese Eastern Railway, which is the second link of the Trans-Siberian system, has been, is, I might say, one of the greatest trade routes of the world, and has been the source of much discussion ever since the time its construction was first contemplated. It was built by Russia, the funds supplied by France, through territory actually a part of China, with the sea connections to the southward on the South Manchurian Railroad owned by Japan (since the Russian-Japanese War).

Of course, the question arose: Did we, perhaps, have some ulterior motive in coming in at that time to operate a railroad that represented so many different and possibly conflicting interests? One has to recognize that Japan, for instance, had an immense interest in the operation of the Chinese Eastern Railway, the great trade route tapping the whole of the Siberian territory as well as Northern Manchuria, the sources of the freight and material that would come to Kuancheng-tzu, the end of the South Manchurian Railway, and change in order to go down through the Province of Sheng-King to old Port Arthur.

On the other hand, it was equally clear that China could not contemplate without some very definite understanding the operation of a line which ran through her territory, especially when that line was a vital element in the political control of the region. Then again, the French quite naturally felt, after millions of francs had been poured into Russia prior to the war, in the form of bankers' loans, that they had a very definite interest in the future of a railroad to which they had contributed a substantial portion of the cost, taking in return bonds of a government that had ceased to exist.

It was to that problem, therefore, that we had to devote our attention in order to accomplish the aim, threefold in character, which we in America had in approaching this situation. First was a clear call for help from the body of the Russian people, irrespective of the government that might control temporarily their political condition. That we could not ignore.

In Siberia the policy of the Russian Government for half a century had been to hold Siberia in reserve and not allow the development of manufacturing plants to turn raw materials into fabricated articles. There were hardly any plants for manu-

facturing any article used in modern civilization, and yet a wealth of raw materials—iron in plenty, no constructive steel of any kind; coal in huge quantities, practically untouched; wool in Mongolia, in Siberia, and not a single woolen mill in the whole region to make cloth; all the raw materials required in the manufacture of glass, and you could not get a pane of window glass in the whole of Siberia. The reason was that the importation of these articles from Germany to Russia and through Russia to Siberia automatically ceased with the beginning of the war, and with such cessation over a period of five years a complete economic vacuum had been created. The Siberians had no acceptable money and no manufactured articles. The result was that if one desired to buy food with the ruble, the peasant would not sell, because you could buy during one period from five hundred to six hundred rubles for one dollar, which meant that the paper ruble was not worth the cost of its making.

Our effort, therefore, was primarily to open an avenue by means of the Chinese Eastern Railway and the Trans-Siberian Railway that would permit Japan, China, Great Britain, the United States and any other countries that might have articles to pour in, to exchange those articles for the accumulated food and other supplies that had not been moving out of Siberia and were badly needed in other parts of the world. It was a question of getting the raw materials that the world needs and exchanging the fabricated articles of various kinds which those who needed the raw materials were in a position to give.

Another reason for American aid was that there was an enormous number of refugees pouring across the mountains into Siberia from the Bolshevik portion of Russia, and plague, pestilence and famine had all followed in their train. These refugees were living along the railroad in box cars, baggage cars, camping without any of the needed articles, and the appeal of those millions of people who were dying of dysentery and typhus and kindred diseases was a compelling one. Try to realize that in the whole of that district there was not a single drug to meet the oncoming of that pestilence! We wanted to get drugs, doctors and nurses there if we could.

Then there was a third reason: Our Government felt that if we could keep the railroad open, permitting communication between the disintegrated parts of that portion of the world, we

should tend to stabilize general conditions in the only way they could be stabilized, by keeping transportation at least partially moving so that there could be some exchange of goods and also of ideas. Peoples fall apart when they cannot communicate with one another. This was doubly important in Siberia, a country which is so completely cut off during the winter season.

When one recalls the Siberia pictured by George Kennan in his articles thirty or more years ago and contrasts it with the real Siberia, one realizes how inadequate were our conceptions of that wonderful country. It has every kind of climate and every kind of scenery. From Vladivostok I traveled some four thousand miles along the railway. I went through plains of Siberia that could raise wheat and more wheat, and make our product seem but a small factor in the wheat supply of the world. I passed over mountains that are not unlike the great mountain ranges of our own country. I crossed the great waterways, a maze of rivers navigable into the Arctic Circle, splendid media of transportation, fringed by virgin forests not yet touched; and I reached the district which stretched from Krasnoyarsk on to the Ural Mountains, the black loam belt, already a prosperous wheat and dairy district. In times past these dairy products were transported through Russia, then Sweden, and were consumed on the breakfast tables of England. There were tremendous areas with cattle that reminded one of the old biblical quotation of "the cattle on a thousand hills."

Originally the country had been populated by various nomad bands of the Mongolian race. Subsequently, in the seventeenth century, the early Cossacks, a sort of cowboy of Russia, in the development of pioneer civilization, pressed on to the eastward until they reached the Pacific Coast and gradually subjugated the native tribes. They were followed by the exiles, and in recent years immigrants assisted by government bounties.

With a hard-working, earnest population, with a roadbed completed, with resources hardly scratched and of a character that must be considered in the reconstruction of our economic world of to-morrow, our Government felt we had an overpowering interest in seeing that railroad operation should be maintained in order to stabilize a region that meant so much to the future of the world as a whole.

Then, generally, we had as the inspiration of the policy of our

Government, in the face of the perplexing problem of Russia, our profound faith in the wonderful future that awaits the Russian people when they shall have recovered from this intense prostration which was largely the product of the exhaustion from overeffort in the Great War. Russia was not in the least prepared economically and industrially to make the effort she made, and, like a man who has labored far beyond his strength, she collapsed. That is what this present economic, industrial and political condition in Russia means.

But the day of Russia's sickness was the day of all others when the nations of the world should be careful that the rights that belong to Russia well should be preserved from Russia sick, so that in the years to come she might feel that in those hours when she was sacrificing, no advantage whatever, in trade or otherwise, had been taken of the heritage which is hers. That was the primary thought which lay behind the American policy toward Russia during those years.

THE INTER-ALLIED TECHNICAL BOARD

For all these reasons, it did seem that if we could obtain some general agreement among those interested which would permit the operation internationally of this great trade route, we should that much more be aiding toward the stability of Siberia, and eventually of Russia. Lengthy negotiations eventuated in what is known now as the Inter-Allied Agreement of 1919 for the control and supervision of the Chinese Eastern and Trans-Siberian railways. Under that agreement there was appointed an Inter-Allied Committee, consisting of representatives from each of the countries, from China, Great Britain, France, Italy, Japan, Russia and the United States, which would have to deal with such problems as financing and general supervision, the problems that would necessarily come within the purview of a board of directors of a railroad company. Under the control of the Inter-Allied Committee two boards were created, a Military Transportation Board and an Inter-Allied Technical Board, on which latter was a qualified engineer from each of the countries represented. It was provided in the agreement that the president of the Technical Board should be Mr. John F. Stevens, the American engineer and the American representative.

This Board, with Mr. Stevens as its head, settled down to try



INTER-ALLIED TECHNICAL BOARD AND STAFF AT OMSK, SIBERIA, MAY, 1919
President Stevens at Center of Front Row

to work out the operation of the Trans-Siberian system, faced by bitter civil war, the menace of undisciplined Cossack bands, the jealousies of factions and conflicting nationalities. Mr. Stevens struggled bravely for a period of one year. The railroad was guarded in part by our American troops, in part by Chinese troops, in part by Czechs who had come through Siberia and who were still there, and finally by contingents of Japanese troops. We had, as it were, a miniature league of the great powers operating a large railway system which had gone temporarily into bankruptcy, because of the failure of the government which had previously controlled it.

Such was the task undertaken by Mr. Stevens with the assistance of engineers who had been trained on our own railways and had wrestled with the same problems of the long haul, the broad gauge, the heavy grade, and winter weather such as our engineers face on the Northern Pacific and across the Sierra Nevada Mountains. And what a work they did! I wish I had time to tell you something about the difficulties of those men in a country where they did not know the language; in a country torn by civil war, and where they were compelled to operate through a Russian personnel who could not understand the modern treatment of labor. In addition they were called upon to overcome the friction and the irritability that necessarily accompany far-reaching revolution. The wonder is that Mr. Stevens, although backed by his experience in the management of the Great Northern Railway, his constructive work on the Panama Canal, and his big, generous philosophy of life, kept his temper, his poise and his judgment. We have him to thank that to-day two great Russian highways are preserved to the Russian people and open to world trade.

The time came when our national feeling was such that, war being over, we could no longer hold our own troops in Siberia. Popular feeling was very much against it and the men longed to go home. Our troops were therefore withdrawn. With the troops went the majority of our engineers. I frankly confess that it was with considerable regret I saw our men abandon a task only half finished. This was the comfort, that under them they had had Russian engineers who had coöperated with them and had shared the benefit of the training of our own engineers in modern methods of operation. At the request of the Russians

Mr. Stevens consented to remain. For almost two years with only one or two assistants he continued to superintend the operation of the great Trans-Siberian system, thus occupying a position unique in the history of American engineering. With a life experience of sixty years, calm, cool, far-visioned, with all his personal ambitions, I imagine, gratified and cherishing but one purpose, to serve his country as best he could, quite alone he completed the task which he had undertaken. From a small apartment at Harbin he exercised a moral influence during that period of reconstruction in the Far East, the results of which will continue to operate long after our generation has passed away.

It is singularly interesting to try to picture the polyglot throng which poured through his office day by day as he counselled with Chinese generals, Manchurian leaders, Japanese diplomats, civilians and bureaucrats, Cossacks, Frenchmen, Englishmen and Americans of all kinds, united only in their faith in one man, who seemed to be the sole disinterested factor in that bewildering situation. It was an extraordinary service which he rendered, and we, his friends and co-workers, are proud to join with his professional colleagues in giving to him the supreme recognition of a task faithfully performed.

PRESENTATION OF THE MEDAL

BY

CHARLES FREDERIC RAND

*Chairman of the Board which made the Award; Past-President
American Institute of Mining and Metallurgical Engineers*

RESPONSE

BY

JOHN FRANK STEVENS

The Medalist for 1925

PRESENTATION OF THE MEDAL

Mr. John F. Stevens, Doctor of Laws, Honorary Member of the American Society of Civil Engineers, recipient of the Distinguished Service Medal of the United States, Officer of the Legion of Honor of France, of the Order of the Rising Sun of Japan, of the Order of the Golden Grain of China, of the Order of the Striped Tiger of China, and of the War Cross of the Republic of Checko-Slovakia, by the unanimous voice of the John Fritz Medal Board of Award, representing the American Society of Civil Engineers, the American Institute of Mining and Metallurgical Engineers, the American Society of Mechanical Engineers, and the American Institute of Electrical Engineers, in recognition of your distinguished services as a Civil Engineer, particularly in connection with the Panama Canal, the building of railroads, and as Administrator of the Chinese Eastern Railway and of the Trans-Siberian Railway, I have the honor and the great pleasure to deliver to you this gold medal.

RESPONSE BY MR. STEVENS

It is a wise provision that the etiquette of this occasion requires that the Medalist shall say not much, and that of little consequence. About all that is required of him is that he shall look pretty.* In both of these important particulars I feel that I am fully qualified.

I have been sitting here this evening in a daze, wondering if this ceremony were not an iridescent dream, from which I would shortly awaken to the "cold gray light of the morning after." But the concrete evidence which I hold here is the symbol and visible token of the great honor which has been bestowed upon me, and which marks the very zenith of my professional life.

I am somewhat in the condition of the gentleman who came into conflict with the law, who upon being asked whether he was

*Mr. Stevens alluded to the numerous decorations from governments, which he was wearing, in accordance with the custom of these presentation ceremonies.

guilty or not guilty, replied that he could not tell until he had heard what the lawyers had to say. But since listening to the silver tongued advocates who have preceded me, one must be inclined to the opinion that they agree with the decision of the four great Engineering bodies, that if I were not wholly guilty in certain cases which demanded considerable ability and involved great responsibility, I was, at least, seriously implicated. Time, the great Adjuster, can always be trusted to render a just verdict, or to reverse an unjust one.

It is now more than a half-century, fifty-four years to be exact, since I, a raw lad, without money, influential friends or technical training (I had never heard the last expression), cast my hat into the ring and decided upon an engineering career. Just why I did so I do not know, for other than perhaps a natural aptitude for higher mathematics and a very decided tendency toward wanderlust, which still abides with me, there were no valid reasons why I should have made such a selection for my life work; but I did, and have never regretted it, least of all to-night.

I very soon realized that I must overcome as far and as speedily as possible the serious handicap of the lack of a technical education, and so, for many weary years, my Bible was the works, written on paper and in timber, iron and stone, of those great men who have long since gone to their reward, who laid so well the foundation of modern American engineering practice, which for boldness and fertility of conception and thoroughness of execution, has no peer in the world.

Many times during that long period when a fairly successful career looked so uncertain, I asked myself: "Is it worth while? Why not just drift along as so many are doing, for the result will be the same in the end?"

But I think that I was fortunate in that for years my work took me away from the petty trumpery of civilization into the wide open spaces and among the mountains, where one lives close to Nature, who is the great Comforter and Mother of us all and who is ever ready to whisper a word of cheer to the despondent.

As an American poet sang of Agassiz:

"Whenever the way seemed long,
Or the heart began to fail,
She sang a more wonderful song,
Or told a more marvelous tale."

The answer to the old-time discouragements is made here to-night; it is full and complete. I would that I had the brain and the tongue to give proper expression to my heartfelt appreciation of it and of what it all means to me.

Whatever successes I have been permitted to achieve have been largely due to the able work of the many fine men upon whom I have relied for advice and assistance, and I am happy to know that of all those who are now living there is not one that I cannot call a friend.

I have thought that perhaps this honor which has come to me may be greater than my deserts would justify, but I bow to the decision of the majority and am content.

And so, friends, as the shadows of life lengthen along my pathway and I go on to my appointed time and place, I shall go with the feeling that while material wealth has passed me by, I have gained something which money cannot purchase and which is the visible evidence that I have not lived wholly in vain and that I can claim comradeship with those great minds who have previously been so signally honored at this place.

Mr. Chairman and Members of the Board: Through you I thank the great body of Engineers for the wonderful distinction which it has conferred upon me, and I thank all of my friends here to-night for the compliment of their attendance, for which I am most grateful.

LETTERS AND TELEGRAMS
OF CONGRATULATION

LETTERS

AMBASSADE DE LA REPUBLIQUE FRANCAISE AUX ETATS UNIS

Washington, le March 16, 1925.

The French Ambassador presents his compliments and begs to express his regrets not to be able to accept the kind invitation of the John Fritz Medal Board of Award to be present at the dinner in honor of Mr. John Frank Stevens on March 23rd.

Mr. Alfred D. Flinn, 29 West 39th Street, New York.

JAPANESE EMBASSY—WASHINGTON

Mr. John R. Freeman,
Chairman, Committee of Arrangements,
The John Fritz Medal Board of Award.

March 13, 1925.

Dear Mr. Freeman:

I have received your very kind letter of March 9, inviting me to attend a dinner to be given in honor of Mr. John Frank Stevens at the Engineers' Club, New York City, on Monday, March 23rd, and to the presentation to him of the John Fritz Gold Medal.

I am very anxious to be present on the occasion as I was closely associated with Mr. Stevens in the supervision of the Trans-Siberian and Chinese Eastern Railways. I regret exceedingly, however, that a previous engagement with our Consul-General at New York for that evening will prevent me from being present on that happy occasion.

May I ask you to be good enough to extend to Mr. Stevens my heartfelt congratulations upon the distinction he is about to receive?

Sincerely yours, T. MATSUDAIRA.

CHINESE LEGATION—WASHINGTON

Dr. John R. Freeman, Chairman,
The John Fritz Medal Board of Award.

March 12, 1925.

Dear Sir:

I beg to acknowledge the receipt of your letter of March 9th inviting me, on behalf of the John Fritz Medal Board of Award, to attend a dinner to be given in honor of Mr. John Frank Stevens at the

Engineers' Club, New York City, Monday, March 23rd, at 7 P.M. and also the ceremonies of presentation to him of the John Fritz Gold Medal at 8:30 P.M. in the Auditorium of the Engineering Societies Building.

I wish to thank you for the invitation, but I regret that my engagements are such as to make it impossible for me to be present on this interesting occasion.

I cannot, however, allow this opportunity to pass without voicing my admiration for the genius of Mr. Stevens as an engineer who has left monuments of his achievements in all parts of the world. A more worthy recipient for the John Fritz Gold Medal can hardly be named.

Very faithfully yours, SAO KE ALFRED SZE, Chinese Minister.

THE CZECHOSLOVAK LEGATION—WASHINGTON, D. C.

March 12, 1925.

Mr. Alfred D. Flinn, 29 West 39th Street, New York.

Sir:

I beg leave to acknowledge the receipt of your letter of March 11th, extending to me an invitation to attend the dinner given in honor of Mr. John Frank Stevens at the Engineers' Club in New York, March 23rd, preceding the presentation to him of the John Fritz Gold Medal for great achievements as a civil engineer.

I hasten to express to you my cordial thanks for your thoughtfulness, and at the same time my exceeding regret at my inability to accept, owing to a previous engagement for the same evening.

Wishing you and Mr. John Frank Stevens all success, I am

Very sincerely yours, DR. F. CHVALKOVSKY,
Czechoslovak Minister to the United States.

BORIS A. BAKHMETEFF
2 Rector Street, New York

March 20, 1925.

Hon. John F. Stevens,
Engineering Societies Bldg., New York City.

Dear Mr. Stevens:

I am leaving for Canada this evening and shall be away from the city on the day of the presentation to you of the John Fritz Gold Medal 1925. I regret not to be present at the ceremony and not to offer to you in person my most sincere felicitations with an expression

of the highest esteem and admiration which I hold for your long-time work as an engineer and statesman.

I am particularly familiar with that period of your activities when you were devoting your invaluable experience and good will to the people of my country; first as the Head of the Railroad Commission in Petrograd and later as Head of the Committee in charge of the Chinese Eastern Railroad. Your high ability and tact in handling problems of extreme delicacy were illuminated by a spirit of disinterested service and a keen desire to assist a people in distress. I am convinced that when Russia is back on her feet and the people of Russia are in a position to judge and to express their feelings, they will cherish your name as one of Russia's best friends, and will associate your activities with one of the most lofty examples of American spirit.

Pray accept my warmest congratulations at this momentous occasion of justified reward, and believe in the deep gratitude and sincere feelings of

Yours faithfully, BORIS A. BAKHMETEFF.

(Formerly Imperial Russian Ambassador to the United States.)

SUPREME COURT OF UNITED STATES—WASHINGTON, D. C.

My dear Mr. Freeman:

March 22, 1925.

I came to know Mr. John F. Stevens while I was Secretary of War, and had in my official charge the preparation for the construction of the Panama Canal. This was in June, 1905. Circumstances thrust on us suddenly the selection of someone to go down to the Isthmus and take up the work of organization of that great enterprise. Mr. Stevens had been recommended to the President and to me by a number, but most strongly by Mr. James J. Hill, of the Great Northern Road, and the emphasis upon Mr. Stevens' qualifications for the stupendous engineering task, from a man of Mr. Hill's knowledge of great construction and keen perception of men who did things, and his intimate experience with Mr. Stevens, was what chiefly led to his selection.

Mr. Stevens gave two years to the work. Mr. Shonts attended to the securing of supplies and the organization in this country, while Mr. Stevens was on the ground and mapped out what had to be done and gave the project a real form, of which General Goethals, who came after him, has always expressed his grateful appreciation. Mr. Stevens was a modest man and yet a man of very strong personality and real convictions.

The strain upon the patience, ingenuity, mental and physical

energies of one charged with the responsibility for the great project in that tropical country, of overcoming the chaotic conditions which presented themselves at a time when yellow fever had shown its ugly head and was threatening, when sensational newspapers and correspondents were only too glad to find defects and exaggerate them, when the opposition to the Panama route on the part of those who favored the Nicaragua plan continued to prompt attacks, when the question was pressing of what kind of labor should be used, whether Chinese or white or black, when the inconveniences and dangers from disease, risked in the moving into a strip forty miles long by ten miles wide of such a body of labor as was needed, had to be anticipated and met, cannot be overstated. A genius for organization was needed, and Mr. Stevens proved himself equal to the demand. But so it was that after having rendered this valuable service to his country, Mr. Stevens found his strength exhausted and he could not continue. He, therefore, urged that he be relieved, and President Roosevelt acquiesced with regret in the loss of further service from him.

While Mr. Stevens was there, a body of business men, made up of the commercial clubs of Chicago, Cincinnati and St. Louis, upon my invitation visited the Isthmus and spent a number of days there. They appointed a committee to examine the work that had been done, and they made a report to me as Secretary of War as to the situation just as Mr. Stevens was leaving. They went there because their interest had been aroused by reports of various kinds. It was a delight to me to receive from them, after their honest and thorough investigation into the work, a strong commendation of Mr. Stevens, and an expression of admiration for his achievement. It gratifies me that your Societies are about to evidence their appreciation of the high qualities of Mr. Stevens and of the debt that our country and the World owe him for what he has done, not only on the Isthmus, but on the railroads of this continent, in Russia and in Asia. I am glad to add a word to the tribute that you are paying him.

Sincerely yours, WM. H. TAFT.

Mr. John H. Freeman, Chairman, The Engineers' Club, New York.

ROOT, CLARK, BUCKNER & HOWLAND
31 Nassau Street, New York

John R. Freeman, Esq.,
Providence, Rhode Island.

March 14, 1925.

My dear Mr. Freeman:

I thank you very much for the invitation to the meeting at which the John Fritz medal is to be presented to Mr. John F. Stevens, on

the 23rd of March. I regret very much that I have at that time to be on my way to the Pacific Coast, so I must forego the pleasure.

I hold Mr. Stevens in very high esteem, especially because I knew something of the tremendous obstacles against which he labored with extraordinary courage and skill in his endeavor to resuscitate the Russian railroad system and afterwards to pull the Chinese Eastern Railroad out of the difficulties created by the disturbed conditions which surrounded it. He richly merits the recognition which he is about to receive. I hope you will have a delightful time.

Always faithfully yours, ELIHU ROOT.

NEWTON D. BAKER

Union Trust Building, Cleveland

My dear Mr. Stuart:

March 14, 1925.

I am genuinely sorry that I cannot be present on the evening of March 23 when Mr. Stevens is to receive the John Fritz medal. A generation is rich which can produce even a few men with the constructive genius which Mr. Stevens has shown. To have had any part in the Panama Canal is a distinction, to have his part is better than to found a dynasty.

His Far Eastern work was a brave and constructive response to a call for service in an obscure and troubled place. It helped and its spirit of loyalty to country and to mankind was beyond praise.

Other engagements prevent my presence, but I share the general pleasure in the event.

Faithfully yours, NEWTON D. BAKER.

Mr. Francis Lee Stuart, New York City.

LAW OFFICES—LANSING & WOOLSEY

8 Jackson Place, Washington, D. C.

John R. Freeman, Esq.,
Providence, R. I.

March 14, 1925.

Dear Mr. Freeman:

I am gratified to learn from your letter of the 12th that the John Fritz Medal is to be awarded to Mr. John F. Stevens, for no man is more entitled than he to receive such a distinguished recognition of eminent services as a Civil Engineer. Naturally my knowledge of his achievements are limited to his work in connection with the Trans-Siberian Railway during the World War, but the herculean tasks which he then performed and the obstacles which he overcame

are evidences of an energy and of talents which raise him to the first rank among those of his profession.

Appreciating his work and admiring his ability as I do, I regret the more that it is absolutely impossible for me to be present on March 23rd and to participate in the presentation ceremonies. I would like to be there and show by my presence the high esteem in which I hold Mr. Stevens. As it is, I can only ask you to express to him my real regret at being absent on that occasion and my sincere felicitations upon this signal manifestation of the high reputation which he has won among his fellow countrymen.

Thanking you for your invitation and letter and repeating my regret that I cannot be with you on the 23rd, I am

Sincerely yours, ROBERT LANSING.

40 Wall Street, New York,
March 13, 1925.

Mr. Alfred D. Flinn,
Assistant Secretary,
The John Fritz Medal Board of Award.

Dear Mr. Flinn:

I sincerely regret that I shall be unable to attend the dinner in honor of Mr. John F. Stevens on the evening of March 23rd, as my engagements necessitate my absence from the city on that date.

In this connection may I express my pleasure at the well-deserved tribute that is being paid to Mr. Stevens, and extend to him through you my hearty congratulations.

Yours sincerely, GEO. W. GOETHALS.

ASSOCIATED VETERANS OF THE RUSSIAN RAILWAY SERVICE CORPS

St. Paul, Minnesota,
March 23rd, 1925.

Mr. John Frank Stevens,
Engineering Societies Building,
New York.

Dear Mr. Stevens:

The award of merit bestowed on you to-night tells its own tale of a life spent in the achievement of a lofty aim, of a life given to high resolves and heroic endeavor. It is but a public acknowledgment of the esteem in which your confrères the wide world over have ever held you. Nothing that we can say could augment the meed of praise of which you are the fitting recipient, but the message of our congratula-

JOHN FRITZ MEDAL BOARD

tions and good wishes on your newly won honors has a significance somewhat different from the messages of your other associates, for we were with you in the trying times of war.

We saw you, therefore, in a different light from others. We know you not only as an engineer of the first rank, but also as a soldier who gave without stint the powers of your heart and mind to succor a fallen nation in distress. We know you as one who labored strenuously in behalf of a suffering people. We know you as one who could, despite the thwarting of your designs and despite the apparent futility of your efforts, persevere in the hope of bringing relief to a people who were enmeshed in the mazes of a revolution. We know you, too, not only as a worker in steel and stone, but also as one who tried to teach a people to whom liberty was but an empty word, the glory of American ideals, who exemplified for them the golden worth of the spirit of this country.

It is because we were witnesses of your whole work for several years on the plains of Siberia that we know there is none more worthy of the high honor bestowed on you to-night. In all the shower of congratulations and well wishes that has come to you we would have you know there are none more heartfelt, none more sincere than our own.

Cordially, C. TREAT SPEAR,
President, on behalf of the American Railway Engineering
Expedition to Siberia.

March 25, 1925.

Mr. John F. Stevens,
50 Church Street,
New York, N. Y.

Dear Mr. Stevens:

It was a matter of a great deal of regret that I was not able to be present on the occasion of your being presented with the John Fritz Gold Medal a few days ago.

Surely, there is no one who more richly deserves this honor than yourself, and it would have been a great pleasure to me to have been present on that very enjoyable occasion, if it had been possible.

I hope you will live a good many years to enjoy the honor which has been so justly bestowed upon you.

Yours very truly, H. E. BYRAM,
President, Chicago, Milwaukee & St. Paul R. R.

PANAMA RAILROAD CO.
PANAMA RAILROAD S.S. LINE
24 State Street, New York

March 24, 1925.

My dear Friend:

It was with a personal and official pride that I learned through the public press of the presentation to you last night of the "John Fritz Medal" by the allied engineering societies.

I was invited to attend, but my physical and other conditions did not permit my doing so. You know that my warm regard for you is not based only on my layman's recognition of your technical and official achievements. One of the most delightful memories I have in connection with my almost life-long work in helping to bring about the construction of the Panama Canal centers around my close association with you.

That you have received in addition to your other decorations and acknowledgments of service the highest testimonial from your brother experts must be a matter of profound satisfaction to you as it is to me.

May you live long and prosper.

Sincerely yours, E. A. DRAKE.

Mr. John F. Stevens, New York City.

TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS
OFFICE OF THE PRESIDENT—ST. LOUIS

March 16, 1925.

Mr. Francis Lee Stuart,
New York.

Dear Mr. Stuart:

The presentation of the John Fritz medal to Mr. John F. Stevens is a fitting and just recognition of the valuable services rendered by Mr. Stevens. He is a great engineer, ripe in experience and mature in judgment, always ready to place his services at the disposal of the nation when needed.

I had the good fortune to be associated with Mr. Stevens on the Russian Railway Commission during the World War. His wise counsel and resourceful talent were in constant demand by those in authority; moreover, his valuable suggestions proved a material factor in keeping the Eastern front manned after the Russian debacle until a sufficient number of American troops were available to turn

the tide on the Western front, which brought the war to a successful termination. It is a great pleasure to add this testimonial to his many other achievements, I assure you.

Yours very truly, HENRY MILLER, President.

Cleveland, Ohio, March 4, 1925.

Dear Mr. Stevens:

On my return from the Canal Zone, where, with my friends Doctor S. W. Stratton and Doctor William Gerry Morgan, of Washington, I spent a most delightful week as the guest of Governor Walker, I was pleased to learn that at the January meeting of the Board you were awarded the John Fritz Gold Medal. It is indeed a pleasure for me to extend to you my hearty congratulations upon receiving this, the highest honor of the engineering profession. I learned just last evening from Mr. Calvin W. Rice that the formal presentation of the medal is to be in New York April 1st* and hope it may be my pleasure to be present on that occasion and to have the privilege of congratulating you personally.

When at the Canal Zone we so many times heard your name mentioned in a most complimentary manner and our attention was often called to that great undertaking and the important part which you took in giving it to the world. The engineering profession may well be proud of what you have accomplished, not only for our own country, but also for the countries across the seas. I rejoice that you have received this expression of their high appreciation.

With sincere regards and best wishes, I am

Very truly yours, AMBROSE SWASEY.

Mr. John F. Stevens, New York City.

Pittsburgh, Pa., March 23, 1925.

Dear Mr. Stevens:

I am very pleased to read in the newspapers that to-day you will be awarded the John Fritz Gold Medal, for notable work performed in connection with the Panama Canal.

This is indeed a splendid honor, and I join your many other friends and admirers in extending congratulations. Surely you are a credit to the engineering profession, and because of excellent work of an unusual, varied and difficult character have risen to the point where America may claim you as one of its leading engineers.

With kind personal regards and every good wish, I am

Cordially yours, ARTHUR W. THOMPSON.

Mr. John F. Stevens, New York City.

*Date changed to March 23rd.—Editor.

7 West 43rd Street, New York,

My dear Stevens:

March 26th, 1925.

On my return from abroad yesterday, I learned that the John Fritz Medal had been awarded to you on Monday evening last. I want to express my great regret that I could not have been there to extend my friendship and aid in honoring you. I also want to congratulate you upon receiving this high token of your professional career.

My very best wishes.

Faithfully yours, F. A. MOLITOR.

Mr. John F. Stevens, New York.

WAR DEPARTMENT

UNITED STATES ENGINEER OFFICE, WILMINGTON, N. C.

Mr. John F. Stevens,
New York City.

March 21, 1925.

Dear Mr. Stevens:

I congratulate you on being awarded the John Fritz Medal which you certainly deserve and if I could possibly get away, I would be there to celebrate with you. As it is, we will be there in spirit anyway.

With best personal wishes, I am

Sincerely yours, WM. GERIG.

St. Paul, Minnesota, March 19, 1925.

Gentlemen:

On my return from Hawaii I was happily surprised to see that you have awarded the John Fritz Medal to my dear friend, Mr. John F. Stevens. You have made an excellent decision which not alone honors you, but also all four Founder Societies.

Let me, therefore, compliment you on this occasion.

With kind regards, yours truly, MAX TOLTZ.

John Fritz Medal Board of Award, New York.

TELEGRAMS

March 23, 1925.

John R. Freeman,
Chairman, Committee of Arrangements,
The John Fritz Medal Board of Award.

Regret my inability to be present this evening and witness conferring of John Fritz Medal upon my friend Mr. John F. Stevens. From a layman's point of view no one has better earned that honor. The duty of selecting a committee of railroad experts to go to Russia early in 1917 was placed upon me. Mr. Stevens was my first and only choice for Chairman of the committee. He promptly dropped everything else, accepted the chairmanship, and was on his way across the continent with his associates in less than seven days. The Canadian Pacific Railway Company, recognizing the seriousness of the situation, held the steamship "Empress of Asia" three days beyond sailing date for arrival of Stevens committee. I doubt if the importance of the work done in Russia during and after the war by Mr. Stevens in the various positions which he held will ever be fully appreciated in this country, and this was only one incident in a life full of interesting and important activities.

DANIEL WILLARD, President, Baltimore & Ohio Railroad.

Portland, Oregon,
March 23, 1925.

Jno. F. Stevens,
Auditorium Engineering Societies Building,
29 West 39th Street, New York.

Please accept congratulations on award to you of the John Fritz Gold Medal. Regret that the great distance prevents us from being present at the ceremony to-night.

MR. AND MRS. W. F. TURNER.
(President Spokane, Portland and Seattle Ry.)

Chicago, Illinois,
March 23, 1925.

John F. Stevens,
New York.

Hearty congratulations on receipt John Fritz Medal. Sorry I cannot be present.

M. G. BARNES (Designing Engineer, Canal Locks).

St. Paul, Minnesota.
March 23, 1925.

John F. Stevens,
New York.

Hearty congratulations award John Fritz Medal, an honor richly deserved by you. Very sorry not able to attend exercises to-night.

ALBERT H. HOGELAND (Chief Engineer, Great Northern Ry.).

Portland, Oregon,
March 24.

John F. Stevens,
New York.

We wish to congratulate you upon the high honor you have received. Your friends here take great pleasure in following your distinguished career.

PORTLAND CHAMBER OF COMMERCE.

Chicago, Illinois,
March 20, 1925.

John F. Stevens,
New York.

My dear Mr. Stevens: Had expected to leave here to-night to be present at ceremonies twenty-third and to do you honor on that most notable occasion. However, death of member my immediate family called me west to-night. Regret indeed my inability to be present, but will be present in mind and am greatly pleased to know you are to receive this distinguished honor, so richly deserved.

W. G. BIERD (President Chicago & Alton Ry.;
Formerly Gen. Mgr. Panama R. R.).

REMARKS BY MAJOR FRED J. MILLER,
Chairman, John Fritz Medal Board of Award,
at Dinner at Engineers' Club, Preceding Presentation
of Medal, March 23, 1925

I have recently been reading a most interesting work, in which I find reference to Mr. Stevens. This book is a biography of General William Crawford Gorgas, conqueror of yellow fever. Like all innovators, or proposers of new ideas, Gorgas had plenty of opposition and obstruction.

I quote: "For this patient worker there was evidently to be no peace and no cooperation from official sources. Perhaps the explanation is that Gorgas had to work always with engineers, with 'practical men,' who notoriously have little interest in 'theories,' and who, in their search for truth, do not go much further than the evidence of their own senses. To such minds the mosquito explanation of disease, at that stage of development, made little appeal."

Thus, it seems that the biographer entertained the novel idea that the engineer is particularly reluctant to accept new things; and it is amusing to find later on in the same book that most of the actual opposition Gorgas encountered was, with one notable exception, from persons who were not engineers; and that Mr. Stevens, our guest of honor for this evening, promptly and clearly saw the value of Gorgas' work, as shown by several citations.

One of the earlier chairmen of the Panama Canal Commission particularly disapproved of Gorgas and his work, and had planned to supplant him by a personal friend, who was an osteopath. The book states, "One day he made this suggestion to Mr. John F. Stevens, the new chief engineer, a man who admired Gorgas and loyally supported him in his work. Mr. Stevens answered, 'Gorgas is getting results. What does your friend know about sanitation?' 'Well, he has been in the South,' Shonts replied, 'and has seen yellow fever.'"

That Mr. Stevens has been quick to recognize the valuable work of others and to give them generous credit for it, is recorded in a quotation from General Gorgas, who, on one occasion wrote: ". . . when Magoon had been here only about a month, the Commission joined in a recommendation that I be removed, that I had erratic ideas about mosquitoes, and did not take proper care of yellow fever patients. Not one of those statements was true. When Stevens came down, he reported to Shonts, a month after, that my department was the only one here which was organized on a consistent plan and which was doing good work."