

## ROCKY MOUNTAIN RAILROADER

DENVER, COLO.

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OVER THE HUMP

Climb aboard, fans. This trip our special takes us, in fancy, to the very ridge-pole of the continent, over the highest railroad pass ever constructed in North America. Since our special train only exists in imagination, it makes no difference that part of our journey must be made over rails that were torn up over four years ago.

We'll stop at Tolland on the way up and couple on behind the big rotary and plenty of additional motive power and prepare for a battle royal as our train laboriously fights its way over the frozen wastes of Rollins Pass. Better come along prepared for any eventuality. The trip over the hump takes 2 hours and 52 minutes, under normal, favorable conditions, but don't become excited if we should be delayed a few hours (Or a few weeks). The hump never was the proper place for those who can't take it.

We'll rumble over long, high trestles as our train labors up the steep grade; we'll wind around hairpin curves so sharp we can look out the carriage window and see the entire train of coaches and thundering locomotives; we'll climb from one level to another until we lose all count and all sense of direction; the exhaust blasts of our laboring engines will roar through snow-sheds till we are almost deafened; we'll battle our precarious way around Yankee Doodle Lake, locked in ice and snow now, but in summer, a rare gem of mountain beauty, almost completely encircled by the railroad; the rotary will bore through gigantic snow drifts like a mole, making cuts so deep no light comes in the coach windows; 10,000 feet, 11,000, 11,500, and still we'll keep climbing until we enter an elaborate layout of snow-sheds, enclosing a wye and a beanery and the box-car station with a name that thrills us, Corona, elevation 11,660 feet!

At Corona we'll cut off a few helper engines and start down the other side with the vast panorama of Middle Park spread out below us like a huge map; we'll see grim places, where trains have been swept down the mountain side by avalanches and other trains have been marooned for days by raging winds that would blow them off the track if they dared to venture along exposed sections; occasionally we'll stop to cool the tortured brake shoes and we'll make use of the opportunity to get out and use up another roll of films; we'll spiral down a complete corkscrew and twist around till we wonder if even the train crew knows where we're going.

In course of time, we'll descend to the world of reality and comparatively level country and our trip over the hump will be ended.

We can forget all about those mammoth snowdrifts on our way back from Craig when our train crashes over the Vasquez switch and straightens out to plunge into the warm, protective depths of the Moffat Tunnel. This time it will only require 14 minutes to make the journey that required hours (Or perhaps weeks!) by going over the hump.

We wish space would allow us to describe every foot of the Denver & Salt Lake in detail. Unfortunately, we are limited to only a small fraction of what we would like to say about its wonders. It is a fine railroad and no one could pay it a higher tribute than to say it is an impressive and fitting monument to the grand old man by whose name it is popularly called.

At the close of the year that marks the centenary of the birth of David H. Moffat, we take pleasure in presenting our salute to David Moffat and his railroad in our feature article "Rails To The Moon", on page 3 of this issue.

CLUB NEWS

1939 has been a highly successful year for our club. Various highlights of our activities during the first nine months of the year have been briefly outlined in previous issues of the "Railroader" so we will confine our summary in this issue to events of the last quarter.

## LOCOMOTIVES OF THE DENVER &amp; SALT LAKE RAILWAY (HOFFAT ROAD)

Class	Numbers	Cylinders	Drivers	Pressure	Weight	Tract. Force	Builder and Date
				0-60 Type			
28	20, 21	19x26	51"	180	132,000	28, 160	Alco, 1903
				2-8-0 Type			
42	100-102	22x28	57"	210	209,500	42, 420	Alco, 1904, 05
44	103-123	22x28	55"	210	219,000	43, 980	Alco, 1906, 08, 10
				2-6-6-0 Type			
76	200-211	21&33 $\frac{1}{2}$ x32	55"	225	362,000	76,400	Alco, 1908, 09, 10
76	212-216	21&33 $\frac{1}{2}$ x32	55"	225	361,000	76,400	Alco, 1916 /13
				4-6-0 Type			
30	300	20x28	63"	200	186,000	30,220	Alco, 1904
33	301	20x28	57"	200	182,000	33,405	Alco, 1905
33	302	20x28	57"	200	189,000	33,405	Alco, 1907
34	303	20x28	63"	205	215,100	34,150	Alco, 1910
				4-4-0 Type			
19	390, 391	18x24	60"	175	108,000	19,280	Pittsburgh, 1899
				2-8-2 Type			
63	400-407	26x30	55"	200	295,000	62,700	Lima, 1915
63	408, 409	26x30	55"	200	306,000	62,700	Alco, 1916
Engines	100-105, 107, Scrapped in May, 1937						
"	390, 391 Originally built for Chesapeake Beach R. R. (Scrapped in 1937)						
"	210 Destroyed, 1924						
"	106, 20, 21 Scrapped 1939						

## CLUB NEWS (Continued from Page 1)

It has been a real pleasure to note the large and enthusiastic attendance at club meetings, field trips and excursions. Equally important have been the abundance of selections of railroadiana to provide entertaining and instructive programs. Our old members continue to attend, and new ones commence attending, for a very good reason. They find it well worth while.

To quote an old platitude, "Nothing succeeds like success". We've very definitely got the ball rolling in a big way, fans. Now let's keep it rolling and see if we can't do even better in 1940.

Such an outstanding event as the December meeting deserves much more than passing comment. It was a rare treat for a large group of our members and their friends to view the fascinating panorama of mountain railroading unfolding as Mr. Long, of the D&RGW, showed us the Grande's two fine talking movies "Through The Rockies" and "Desert Empire".

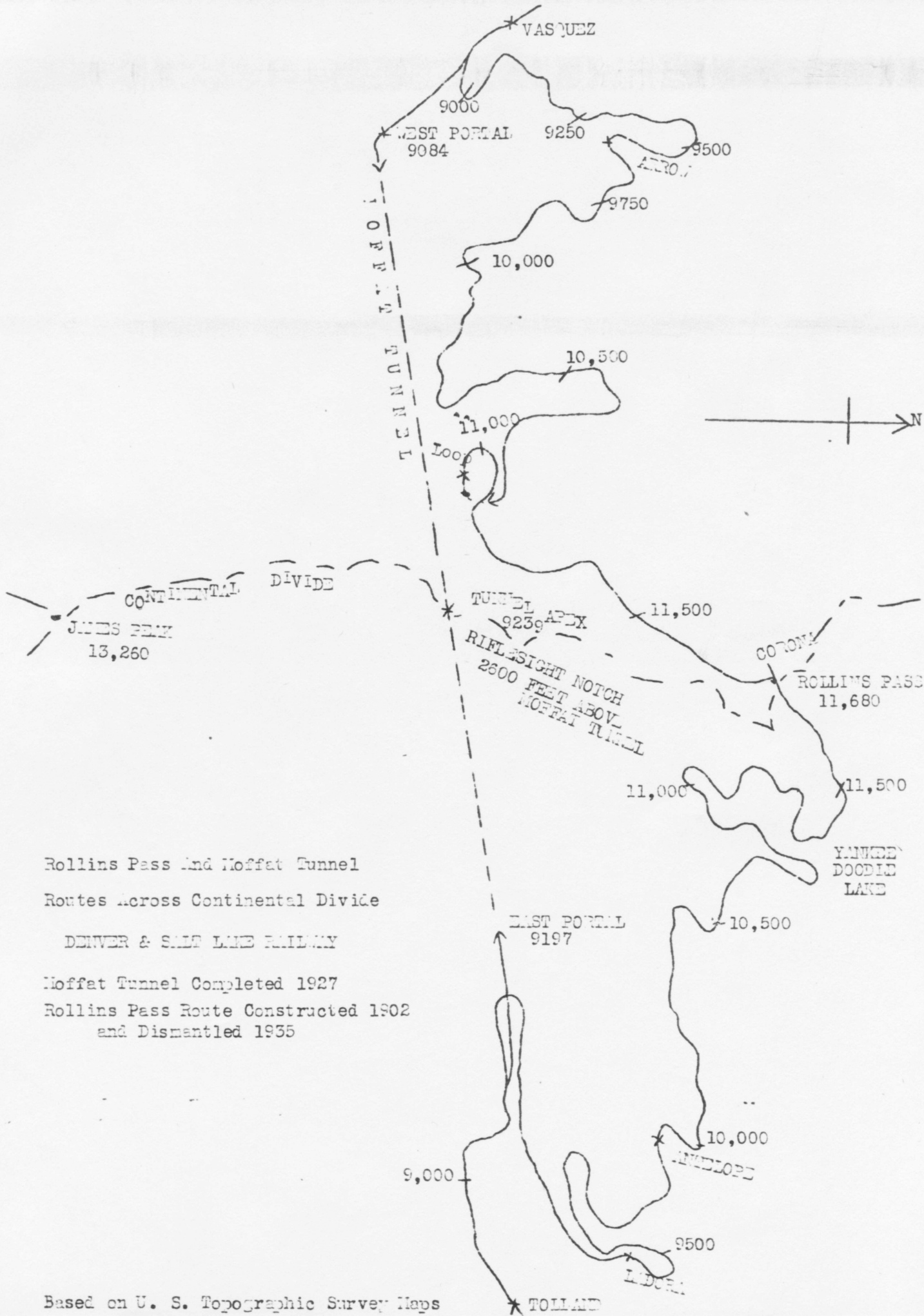
"Through the Rockies" is a masterpiece. With our fellow club member, Mr. Heatwole, veteran engineer who is now retired, at the throttle, the magnificent, big 1704 pulls its luxurious train out of Denver to start the spellbound onlookers on a complete tour of the D&RGW to Salt Lake City via the Royal Gorge and then back to Denver via the Dotsero Cut-off and the Hoffsat Tunnel. Side trips on the narrow gauge and to other points of interest and scenic in the Rio Grande territory are also provided.

"Desert Empire" proudly portrays the phenomenal industrial and agricultural development of Utah. The Rio Grande properly takes pride in the achievements of the Beehive State, having played an outstanding part in helping to make the desert bloom like the rose.

We have delayed publication of this issue in order to include an item of considerable importance. That is an account of our highly successful excursion over three Denver street car lines on Dec. 31, their last day of operation.

The abandoned routes are No. 4, No. 72, and No. 66. Through the extreme kindness of the Denver Tramway Co., we were not only provided with a car, in charge of Motorman H. F. Simmons and Assistant Supt. B. V. Polkinghorne, but the entire trip was actually FREE. "Gentlemen, the car is yours. Which route do you want to see first?" said the genial Mr. Polkinghorne who entertained us at various points with amusing accounts of predicaments encountered by motormen.

(continued on Page 3)



Rollins Pass and Moffat Tunnel  
 Routes Across Continental Divide  
 DENVER & SALT LAKE RAILWAY  
 Moffat Tunnel Completed 1927  
 Rollins Pass Route Constructed 1902  
 and Dismantled 1935

## CLUB NEWS (Continued from Page 2)

On 48th Ave., Motorman Simmons obligingly stopped and backed up the car so we could have ringside seats to watch two New Year celebrants settle their differences in the street. On our way back from the Stockyards we stopped at the 48th Ave. crossover to see the "City of Denver" flash by, crashing over the narrow gauge street car crossover for perhaps the last time. A few minutes later we stopped again on Josephine St. to see another veteran crossover end its usefulness under the roaring wheels of another fine UP train, the "Pacific Limited".

The Denver Tramway system is quite an interesting organization. We hope to see much more of them in our next issue of the "Railroader", when we'll go into details. In the meantime, fans, don't forget that there are still plenty of other street car lines operating in Denver for your convenience and they deserve all the patronage we can give them.

SOMETHING TO REMEMBER

Since the inception of the "Railroader" in June, 1939, your editor has attempted to carry out one of the objectives we had in mind at the time of our organization. That is to publicize, as impartially as possible, all the railroads of the Rocky Mountain region. Each issue features a different railroad.

Our first issue, starting out in a very small way, featured the Union Pacific, and only consisted of two pages. When we got around to the Rio Grande we were able to produce almost four pages. This issue is even larger, as we believe such items as the roster of D&SL engines have hitherto been quite rare among our readers. We also feel that the memory of David Moffat has been sadly neglected and that his story deserves a little extra space.

We want our good friends of the Union Pacific to know that we continue to sincerely appreciate their kindness and co-operation in placing their fine big auction room at our disposal every month for our meetings. Harry Engleson, travelling Passenger Agent, and Mr. Meyers, Freight Agent, made all that possible for us almost two years ago. In return, let's not forget that, in the final analysis, it isn't steam or coal that makes the locomotive wheels go around; it requires revenue, and plenty of it. Any time we can put in a good word anywhere for the UP, we know it will be appreciated.

## RAILS TO THE MOON

## The Story of David Moffat

"Dave Moffat must be going crazy. He can build a railroad to the moon as easily as he can build one over those mountains." So said the skeptics when it became known, around the turn of the century, that David Moffat was making ready to embark on his greatest railroad building venture.

For over thirty years, David Moffat planned and dreamed of the day when he would build a great railroad through the mountains west of Denver, opening up for development the vast coal fields, timberlands, and livestock ranges of Middle Park and North-western Colorado on its way to Salt Lake City.

The skeptics had more than a little bit of justification for their doubts concerning the practicability of parts of the proposed route. True enough, Mountain railroads in other parts of Colorado reached terrific heights as they wound their way over the roof of the continent, but none of the other routes involved such a direct frontal attack on all the massed forces of nature as this new railroad which would have to go over the top of the mountains through Rollins Pass until such a time as a long tunnel could be bored under the Continental Divide.

To even the most casual observer down on the plains the massive snow covered ramparts in the vicinity of James Peak and the Arapahoe Peaks suggest a formidable and unassailable barrier, not alone because of their height, great though it is, but also because of climatic conditions prevailing there for many months every year. A barren and formidable terrain far above timberline, where the climate approximates that of the Barren Lands of the Arctic Circle, and the very earth, incapable of supporting vegetation at that altitude, is riven and in constant turmoil under the torturing

strain of the titanic battle of elements and becomes a treacherous demon, ready at any minute to contemptuously engulf the puny efforts of men who would bring their steel rails into that forbidden domain. Terrific blizzards batter the huge peaks in winter. Gathering force as they howl unimpeded over the smaller mountain ranges and confined within the gigantic funnel of Middle Park, they rage and brawl against the high mountains as they seek to escape through the vortex at Rollins Pass and tear at the rocky crags as if to blast aside every obstacle to their relentless fury. Enormous and fantastic drifts are formed by wind and snow, growing bigger and bigger until they can no longer find a foothold and tumble down the jagged mountain sides in huge, roaring avalanches of snow and ice and rocks, wiping out everything in the path of their grinding cataclysm of merciless destruction.

So much for the mountains. Now for a look at the man who set out to meet their challenge. Perhaps the twenty-one year old Moffat felt that challenge as he first sighted the distant stormy peaks beckoning him on to the end of his hazardous twenty-nine day journey by mule team from Omaha to the Cherry Creek diggings. Having already attracted attention in Omaha by his business ability, the ambitious young bank cashier was engaged by a St. Joseph, Mo., business man to proceed to Denver and open a bookstore in the new gold town. With two wagonloads of stock for the new store, young Moffat arrived in Denver March 17, 1860, and lost no time in becoming one of the most prominent business men in the infant community. Although the bookstore of Moffat & Woolworth grew and prospered at the corner of 15th and Larimer St., it was not long before the young banker returned to his original profession and became one of the founders of the First National Bank of Denver. The stories of David Moffat's sterling character; his warm hearted humanity, and his spotless integrity are far too numerous to mention here. One of the West's greatest empire builders, he was also one of its finest gentlemen.

A contemptuous remark by a visiting Eastern railroad official launched David Moffat on his first railroad building enterprise. The pioneer railroad builders were all carefully avoiding the Colorado mountains in surveying their routes to the West and seemed in no hurry to provide rail service to the growing gold camps. Among the most active of the Coloradans who were agitating for railroad connections with the outside world was David Moffat. Stung by the remark "Denver is too dead to bury", he retorted "Too dead to bury?" "We'll build our own railroads!" Always true to his word, and not given to idle boasting, the Denver Pacific Railroad & Telegraph Co. was formed November 11, 1867, with David Moffat as one of the directors. On June 15, 1870, the first locomotive to enter Colorado pulled its train into Denver, if ever a locomotive bore a fitting name it was that one--the "David H. Moffat".

The names of the railroads which David Moffat was instrumental in building abound in the romance of pioneer mountain railroading. Denver, South Park & Pacific; Boulder Valley Road; Golden, Boulder & Caribou and Denver & New Orleans, just to mention a few of the famous old pikes that are now fading away into oblivion. The fact that they are now all gone reflects no discredit on the business acumen of Moffat and their other builders. On the contrary, at the time of their construction they were highly profitable and useful enterprises. The roaring activity of the mining camps created a furious demand for railroads at any price and in the face of any obstacles. Money flowed like water in those days. Mining and smelting methods in use at that time required hauling immense quantities of ore to distant smelters and the lack of any competing forms of transportation assured the success of almost any mountain railroad project as long as the gold deposits lasted.

Numerous successful ventures in mining, railroads and banking made David Moffat one of the richest men of his time. Several of his railroads were built to serve mining areas in which he was interested. When his request for a railroad to the new camps at Creede was declined he replied "I'll build it myself", and he did. Later, when the fabulously rich strikes were made at Cripple Creek, he again suggested a railroad to the new mines. Again his suggestion was refused, and again came the usual reply "I'll build it myself", resulting in the famous Florence & Cripple Creek.

During the years of his great successes, Moffat never forgot his great dream of a standard gauge railroad direct through the mountains to Salt Lake City. As early as 1867 he entertained the idea of a long tunnel in the vicinity of James Peak and in connection with his later railroad enterprises he had many surveys made of various routes. Finally, at an age when most men would be content to retire and enjoy the fruits of a brilliant and highly successful life, he embarked on his greatest venture.

The Denver, Northwest & Pacific Railroad was incorporated in July, 1902, with Moffat personally investing \$4,000,000. A route was surveyed from Denver to Newcomb providing a comparatively easy ruling grade of 2%, with curvature held to a minimum by an amazing succession of cuts, fills, and 30 tunnels. From Newcomb, at the East end of the great tunnel site, to Vasquez, at the West, it was a much different story. Only seven miles apart, in a straight line through the mountain, but 32 miles over the top by rail with a bewildering succession of hairpin curves, giant trestles, a complete spiral in the track, and practically all laid out on a 4% grade.

Many and great were the unexpected obstacles that sprang up to harass the builders of the new railroad and to cause construction costs to skyrocket above the original estimates. Not only did the mountains provide their share of troubles but opposing interests did everything in their power to create difficulties of a magnitude that would break any but the stoutest of hearts. Still David Moffat carried on. The road reached Corona, at the summit of Rollins Pass, October 2, 1904, and then wound its precarious way down the mountain side to Vasquez. From Vasquez to Kremmeling, down the wide, gently sloping valleys of Middle Park, construction was not difficult and the railroad was finally in rich, revenue producing territory, so the outlook appeared a little brighter, but still things were not destined to work out just right.

As construction costs had soared, so did the cost of operation, continually demanding more and more money from its promoters. The new railroad heralded a great era of prosperity in the region it provided with transportation. Coal, livestock and timber began moving in large quantities from a region that had hitherto been practically inaccessible from the outside world, but unfortunately, the railroad was unable to share in the prosperity it had created, due to the staggering investment it required in construction and the terrific cost of operating trains over Rollins Pass. Very few railroads have ever been confronted with such appalling operating difficulties.

And so the end of the trail drew near for David Moffat. The last of his vast personal fortune had disappeared into the insatiable maw of his greatest venture and he and his associates were confronted with stark defeat. While in New York City to attempt to arrange further financing for his railroad, he died March 16, 1911, a tired and broken old man, believing, in the depths of his despair, that all of his great dream had resulted in total failure.

But the saga of David Moffat does not end with his passing on. Others had faith in his great dream of placing Denver on a direct trans-continental line and they were able and eager to carry the torch that fell from David Moffat's dying hands. A suggestion to complete his great plan as a public undertaking grew in favor and its eventual success completes another thrilling chapter in the story of the Moffat road. Long and bitter court battles sprang up and elections had to be fought and won before the construction of the Moffat Tunnel was finally begun.

Like the Moffat railroad, the Moffat Tunnel far exceeded original estimates of its cost of construction, but it is one of the wonders of the railroad world. It was built by the pioneer bore method, which called for driving a much smaller tunnel, 5x9 feet in size, through the mountain 75 feet from the parallel to the course of the big tunnel. As each quarter mile of the pioneer bore was completed, a cross shaft was branched off to the location of the big tunnel and tunneling started from there in both directions so that work was carried on simultaneously on a large number of headings in the big tunnel. Since completion of the railroad tunnel, the pioneer bore has been lined with concrete and is now used for diverting water from the Western Slope to the Denver water system. The Moffat Tunnel is 6.21 miles long, enters the mountain at East Portal at an elevation of 9197 feet and bores upwards on a 0.3% grade for 2.7 miles to the apex at 9239 feet. From there it descends on a 0.9% grade to West Portal, at an elevation of 9084 feet. Being used by steam locomotives exclusively, an elaborate ventilating plant is required at East Portal to keep the tunnel clear of excessive smoke and fumes. Aside from the famous name it bears, the Moffat Tunnel is noteworthy in many other respects. For a short time after its completion, it was the longest railroad tunnel in North America, having taken that honor away from the Famous Connaught Tunnel of the Canadian Pacific. Its altitude above sea level is many thousands of feet greater than that of the world's other major railroad tunnels. Its most recently acquired unique feature consists of continuous welded 112 pound rails, each one 6.45 miles long, installed in 1938 to eliminate severe