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Durango - Silverton Narrow Gauge Railroad a study

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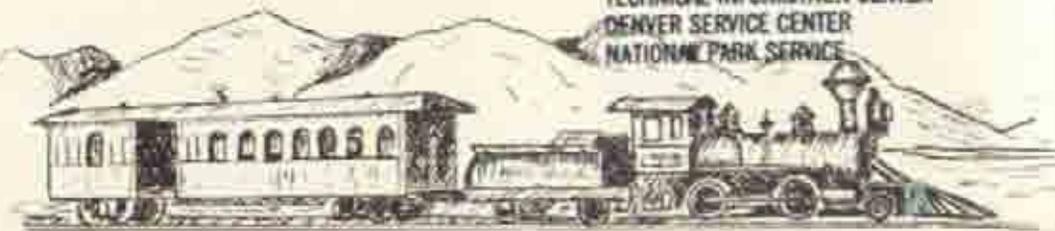
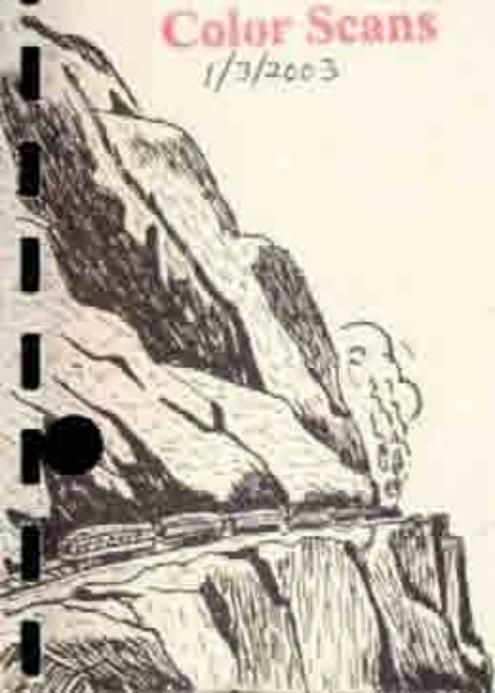
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DURANGO - SILVERTON
NARROW GAUGE RAILROAD

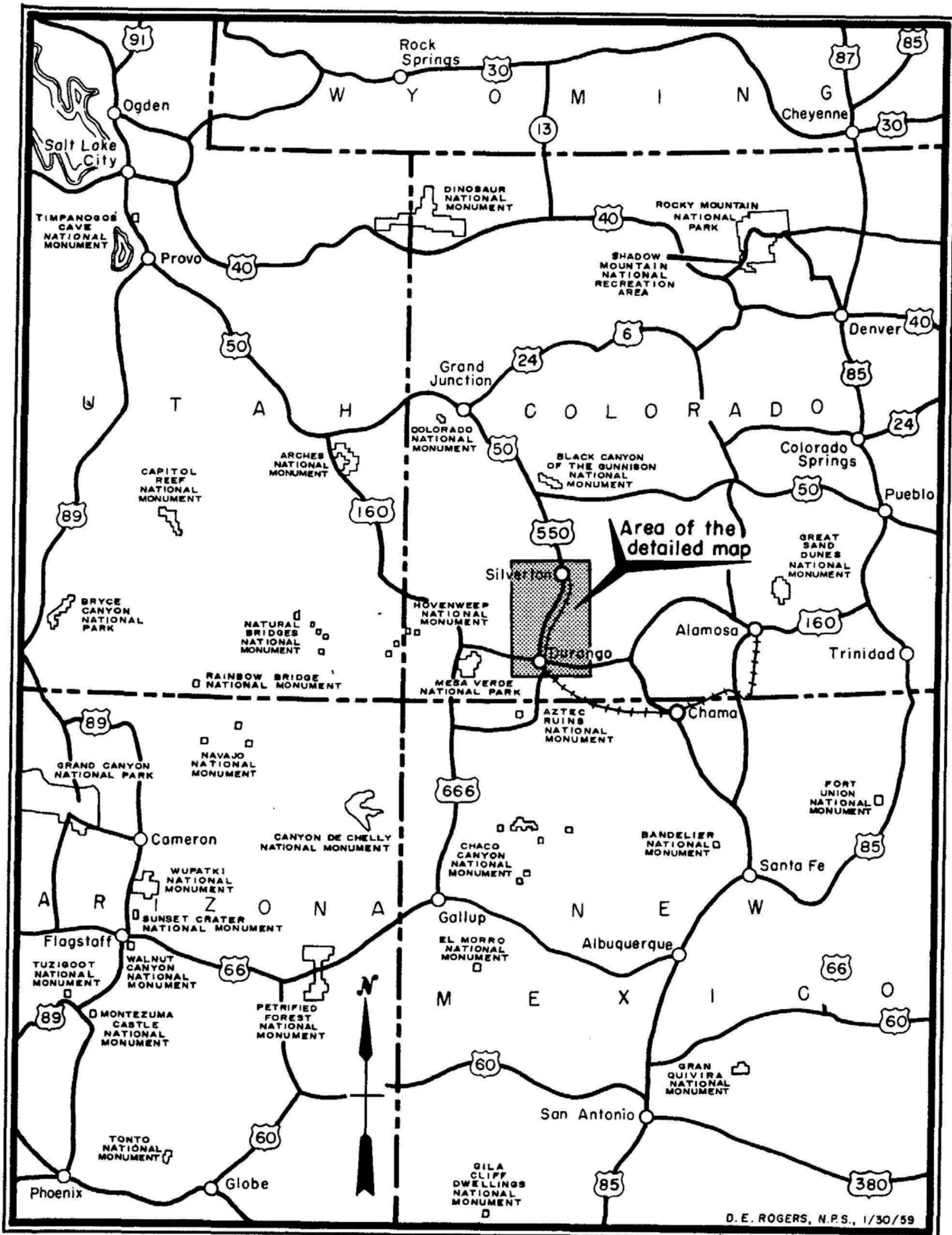
A Study

March 1962

Department of the Interior
National Park Service
Region Two Office
Omaha, Nebraska

INTRODUCTION

This study is the story of a railroad line and an account of a chain of recent events which have complicated that study. It describes in text and picture the Durango to Silverton narrow gauge line of the Denver and Rio Grande Western Railroad, its operating equipment and facilities, its scenic and historic surroundings. The significance of this narrow gauge railroad in our Nation's history is pointed out and a case is made for its preservation. The objectives of such preservation are outlined and some possible solutions are briefed.



VICINITY MAP **ON MICROFILM**
DENVER AND RIO GRANDE WESTERN RAILROAD
NARROW GAUGE
Durango to Silverton, Colorado

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BACKGROUND OF THE STUDY

Between 1870 and the first decade of the 20th century, a web of hundreds of miles of three-foot gauge railroad lines connecting the mountain mining districts of western Colorado with Denver and other cities just east of the Rockies were constructed by several companies. A few of these narrow gauge lines were later converted to standard gauge, but as mines were worked out and highways improved, many narrow gauge lines were abandoned. With their abandonment, internationally famous engineering features and scenic attractions such as the Georgetown Loop, Toltec Gorge, and the Curecanti Needles either disappeared or became inaccessible to the public.

Following World War II there came a great increase of interest in the history of railroads and the preservation of relics of the fast vanishing steam locomotive era. The abandonment of such lines as the Rio Grande Southern narrow gauge from Durango to Ridgeway, Colorado via Lizardhead Pass, Ophir, and Telluride occasioned numerous requests through members of Congress and newspaper editorials that the National Park Service take steps to preserve an important section of the rapidly disappearing narrow gauge railroad. At that time, July 1952, the National Park Service took the position that the Rio Grande Southern had regional rather than National significance; and since the Denver and Rio Grande Western Railroad had trackage on its Silverton branch line where it ran a tri-weekly round trip, the solution to that problem should be sought on a state or local level. Meanwhile, the last truly first class, through-passenger train on narrow gauge--the D&RGW's "San Juan," running from Alamosa, Colorado to Durango and return--ceased operations early in 1951.

The narrow gauge lines of the D&RGW Railroad in Alamosa, Conejos, Archuleta, La Plata, and San Juan Counties, Colorado; and Rio Arriba and

San Juan Counties, New Mexico are now the last surviving sections of regularly operating three-foot gauge railroads in the United States. A field investigation of these lines was made during October 1958 by Regional Chief of Boundary Studies David L. Hieb, accompanied by Historian Ray H. Mattison. A special excursion train from Alamosa, Colorado to Durango and Silverton and return, on those dates, enabled them to cover 245 of the 300 miles of surviving trackage.

The Preliminary Investigation Report, Denver and Rio Grande Western Narrow Gauge Railroad, Colorado, February 20, 1959, based on the above field observations and other information drew the following conclusions:

1. That narrow gauge railroads were a significant phase of the development of travel and communication in the United States. And, that the narrow gauge reached its peak development and made its most significant contributions to history in the high mountain regions of Colorado.
2. That of the remaining 300 miles of regular operating narrow gauge railroad, the Durango to Silverton line is most significant, suitable, and adaptable to preservation as a notable operating example of this historic medium. And, that it represents the last chance for such preservation.
3. That the scenic and wilderness attractions visible and accessible from this railroad line are notable, of probable national significance, and contribute to the area.
4. That the unique combination of colorful and significant historical associations with surroundings of notable scenic and recreational appeal on the Durango to Silverton line makes preservation and continued seasonal operation of the line as a unit of the National Park System worthy of full consideration.
5. That full scale studies to confirm or amend the foregoing conclusions were desirable and justified.

Moreover, it recommended, "That a full scale study of the D&RGW Railroad from Durango to Silverton be initiated to obtain reasonably complete information on its historic, scenic, scientific, and recreational resources and the merits of the case for its addition to the National Park System." This recommendation was approved by Associate Director Scoyen on August 12, 1959.

As the result of a meeting between Regional Director Howard W. Baker and Vice President R. K. Bradford of the D&RGW Railroad Company on October 7, 1959, the railroad agreed to cooperate with the National Park Service in further studies of the Durango to Silverton line.

On October 19 and 20, Regional Chief of Boundary Studies Hieb visited the railroad's headquarters in Denver where Passenger Traffic Manager H. F. Eno, Messrs. J. Bert Byars, and H. A. Phillips of the Engineering Department; Theodore White of the Legal Department; and others assisted him in assembling data relating to the Durango to Silverton Branch. On October 21, Mr. Hieb traveled to Durango with Division Engineer A. C. Black; and on the two following days, accompanied by Narrow Gauge Roadmaster Gene Harden, they inspected the entire line from Silverton to Durango, traveling in an open motorcar which permitted unrestricted views of the right-of-way and its surroundings and innumerable stops for their inspection and the taking of photographs.

The Denver Post, on December 4, 1959, headlined an announcement that:

"The Helen Thatcher White Foundation, a non-profit institution established to preserve historic assets of the state, has agreed to buy the 45-mile line, its equipment and properties from the Denver and Rio Grande Western Railroad for \$250,000.

"The Helen Thatcher White Foundation bears the name of one of its co-founders, the wife of William M. White, Pueblo banker, industrialist, and rancher. Mrs. White is a daughter of Mahlon D. Thatcher, pioneer Pueblo banker, financier, and philanthropist.

"Trustees of the foundation are Mr. and Mrs. White; Mahlon D. Thatcher; Frank A. Kemp, president of the Great Western Sugar Company; Benjamin T. Poxon, mining and banking executive, and member of the Colorado Racing Commission; Palmer Hoyt, editor and publisher of The Denver Post; Floyd K. Haskell, Denver attorney; Arthur Ballantine, publisher of the Durango Herald News and Cortez Sentinel; and A. M. Camp, former president of the Durango First National Bank.

"Purchase of the line by the foundation must be approved by the Interstate Commerce Commission in Washington. Neither railroad nor foundation officials would predict the length of time necessary to

"obtain ICC approval and final transfer of the line. One guess was a year. This would mean operation of the train for one more season by the parent railroad.

"Property to be acquired by the foundation includes all of the right-of-way between Durango and Silverton, the depots and station grounds at Durango and Silverton, all D&RGW owned buildings, lands, water tanks and operating mechanisms on the line; one locomotive (No. 473), a baggage car, baggage-buffet car Alamosa, seven coaches, three maintenance cars, two boxcars, four flatcars, two coal cars, three track motorcars, and two track push cars.

"The foundation will have an option to buy a second locomotive from the Rio Grande for \$10,000."

It was further reported in the Durango-Cortez Herald for December 13, 1959

that:

"The future of the narrow gauge has been uncertain for several years. Many men like A. M. Camp who have fought hard and long for the railroad for many years are of the considered opinion that the Denver and Rio Grande would soon seek abandonment and be successful in their attempt.

"Every D.& R.G. official, including President G. B. Aydelott, has made it clear that an excursion train cannot be considered as a part of modern railroading. Since the operation is a losing one when items such as taxes and insurance are included, they are confident of the result of an abandonment petition. Past experience indicates they have reason for such optimism.

"With this prospect staring us in the face, there is reason to be grateful to the William M. White family, who have set up the Helen Thatcher White Foundation at a cost of \$250,000 to operate the Durango and Silverton Railroad on a non-profit basis.

"The only drawback to the proposal is the loss of tax revenue to government units in La Plata and San Juan Counties--a total loss of \$76,000, two thirds of which will be born by governmental units within La Plata and the other third by San Juan governmental units.

"While the San Juan loss is smaller, it is an even bigger problem for San Juan since it represents a sixth of (its) tax revenues. However, the loss is bound to come within these next few years whatever happens.

"Southwest Colorado is getting a lucky break in the creation of the Helen Thatcher White Foundation. Camp is right when he says this is probably the most important event of this kind since Mesa Verde became a National Park 53 years ago."

The last sentence quoted on the preceding page was deemed significant in that it seemed to reflect the feeling of Coloradoans that the solution to the preservation of the Durango-Silverton narrow gauge had been found and that its future as a major tourist attraction was secure.

However, before the winter snows had ended, this rosy picture began to fade.

The Standard Metals Corporation, controlled by uranium millionaire Charles A. Steen and William McCormick, which had recently acquired the Shenandoah-Dives Mine and Mill, the American Tunnel, the George Washington Shaft and other properties north of Silverton, announced that it would protest the D&RGW's abandonment petition as jeopardizing its million dollar investment. This corporation employed over 100 men to reopen and operate its properties; and it painted a rosy picture of its future plans including large-scale mining of Rhodenite ores to be shipped by rail to a multi-million dollar refinery to be built at Durango or some other rail-connected city.

In April 1960, the San Juan County Commissioners agreed to join in protesting the abandonment petition because of the anticipated tax losses. They were soon joined by the Commissioners of La Plata County and the Durango Chamber of Commerce. These events made the position of the Helen Thatcher White Foundation an unpopular one, and on June 27, 1960, Mr. William M. White issued a lengthy statement containing the following summary:

"Therefore, the Helen Thatcher White Foundation substantiates and reaffirms the position it has always held: It is not a party of the abandonment proceedings, nor does it advocate abandonment. Further, to remove any shred of doubt as to its intent the White Foundation asks the Rio Grande Railroad to suspend indefinitely the sale or transfer of the Silverton Branch to the foundation under their agreement entered into December 4, 1959."

To date, the Helen Thatcher White Foundation has not re-entered the picture.

Interstate Commerce Commission hearings on the D&RGW petition for abandonment, originally scheduled for July 21, 1960, were postponed and not held until November 14 to 16, of that year. In the meantime, the announced plans of the Standard Metals Corporation were scaled down considerably. It announced that satisfactory arrangements to truck its ores to a standard gauge railhead had been concluded; and it withdrew its opposition to the petition to abandon the narrow gauge.

Early in November, it was announced that eighteen Colorado businessmen had formed a Durango-Silverton Railroad Company, incorporated as a non-profit organization to buy and operate the narrow gauge as a passenger-carrying tourist attraction. Assets of \$400,000 were alleged, and an agreement with the D&RGW like that previously made by the Helen Thatcher White Foundation was announced. The President of this company is Emil Arndt, a Durango automobile dealer. Richard W. Turner, also of Durango, is First Vice-President. The only other named stockholder is Ansel Hall of the Mesa Verde Company.

The Interstate Commerce Commission hearings were held in Durango on November 14, 15 and 16, by Lester R. Conley, Hearing Examiner. A summary of the evidence presented at these hearings and in written briefs is contained in Finance Docket No. 20943, served June 6, 1961. This document also contains the Examiner's findings and recommendations. In brief, the latter would permit the D&RGW to discontinue winter operations on the Durango-Silverton line-- something which they had done without permission since 1953--but deny it permission to stop interstate service during the period June 1 to October 1, thus blocking sale to the Durango-Silverton Railroad Company or any other organization not chartered as an interstate carrier.

As anticipated the D&RGW filed exceptions to the Examiner's report, and additional hearings were held by the Interstate Commerce Commission in

Washington, D. C. on December 13, 1961. All indications are that several months may elapse before a formal decision is rendered by the ICC.

These hearings have brought out the following points not touched upon elsewhere in this report:

1. The D&RGW admits it is not losing money on the summer operation of the Silverton Branch.
2. Attorneys for interests protesting the abandonment and sale of the narrow gauge contend that transfer of the Silverton Branch to an operator such as the Durango-Silverton Railroad Company for operation solely as a tourist attraction would result in reversion to the Federal Government of the 29.58 miles (729.9 acres) of right-of-way held by the D&RGW as a grant under the terms of the Right-of-Way Act of 1875.
3. For such reasons (2) and others, the Durango-Silverton Railroad Company has failed to gain the confidence of the local interests in its ability to perpetuate the narrow gauge as a tourist attraction and economic asset to the region.

THE DURANGO-SILVERTON LINE AND ITS RIGHT-OF-WAY

To facilitate identification of the points described below with locations on the attached map and photographs, all have been closely tied in with the railroad's milepost system. Literary style has been sacrificed to informational clarity.

Although trains traversing it start from the Durango depot at Milepost 451.52 the line's "official" beginning is at Milepost 452.42 where it leaves the Durango yards and crosses to the west bank of the Animas River on a three-span steel bridge.

From that point to Milepost 454.47, the track winds along the bank of the river through the rapidly developing fringes of the city of Durango. Much of this area was originally platted as Animas City, and the right-of-way consists of irregular portions of city blocks and easements to cross streets and alleys granted by old city ordinances. The tracts held in fee average a little over 50 feet in width. Urban developments crowd close to the tracks on one side, and a city sewer main parallels the tracks through this portion of the right-of-way on an easement granted by the railroad. The right-of-way lines are poorly defined in this section, and considerable encroachment on railroad lands was in evidence as was the minimal maintenance of the roadbed.

Beginning at Milepost 454.47, the fee right-of-way is a uniform 100 feet in width and adjacent private development is less evident although still considerable along the roughly paralleling highway U. S. 550. After swinging around the foot of Animas City Mountain at varying distances from the highway and the Animas River at Milepost 456, the line passes near a large stone and frame structure currently labeled the "Red Barn" and operated as a dine and dance resort. Here also the line enters the first of two long tangents heading

straight up the valley. The first of these, extending to near Milepost 460, takes the rails across the subirrigated, almost marshy lands at about a fourth mile from the highway and its paralleling development. Here the roadbed has required (or been given) so little maintenance that it has become heavily sodded, and the owners of the adjacent ranch land have taken advantage of the seasonal operation of the railroad to simplify their cattle crossing problems with temporary pole or wire gates across the tracks and even pasture portions of the right-of-way.

Near the beginning of the second tangent the small settlement called Trimble includes a few residences and an extensive motel built close to the right-of-way line. The balance of that tangent crosses attractive meadow lands well back from both highway and river to Milepost 462.43. At that point the line crosses Hermosa Creek, an attractive mountain stream on a "Hall Truss" bridge of creosoted timbers. Such bridges, once common, are now considered a unique feature of this narrow gauge line.

Just beyond Hermosa Creek is the small settlement called Hermosa. The railroad retains here a 679-foot siding, a wood-stave water tank and two substantial frame "section houses", one the former depot. The right-of-way once included extensions for a long wye or spur west up Hermosa Creek but has been reduced to a 200-foot strip from about Mileposts 462.30 to 462.80. Within this stretch Highway 550 crosses to the east side of the railroad and, just beyond, the Animas Valley Consolidated Ditch closely parallels the tracks within the 100-foot right-of-way strip for about one-half mile. Again the narrow strip of land between the right-of-ways of the railroad and the highway is quite thickly built up with ranch homes and small acreages. Just above Milepost 463 a new home had been built very close to the right-of-way line and the owner was using railroad lands for tank storage and other purposes.

Having climbed gradually above the floor of the Animas Valley since Milepost 462.60 the line first enters San Juan National Forest land at Milepost 464.66. There the right-of-way becomes a 200-foot grant from the Government under the terms of the Act of March 3, 1875 (18 Stat. 482). At Milepost 465 the clearing, poles and wires of a powerline mar the lower side of the right-of-way noticeably.

Although the mountain side traversed by the line near Milepost 465.3 is not spectacularly steep, the southern extension of the Hermosa Cliffs 500 feet above the tracks does pose a threat to the line. A few days before the October 23 inspection of the line, an unseasonably heavy, wet snow had triggered rock falls from the cliffs and huge boulders bounding down the slope had crushed rails and ties in several places there. The narrow gauge roadmaster, however, stated that this was a very unusual occurrence.

At this point the right-of-way again becomes a 100-foot fee strip to Milepost 465.98. The line passes a few hundred feet above the buildings of the Golden Spur Guest Ranch, formerly called El Rancho Encantado.

From Milepost 465.98 to 467.75 the line again traverses National Forest land on a 200-foot right-of-way grant emerging briefly on the brink of a cliff above U. S. 550 at Milepost 467.5.

At Milepost 467.75 the right-of-way again becomes a 100-foot fee strip crossing U. S. Highway 550 for the last time at Milepost 468 in sight of an attractive private impoundment called Shalona Lake. From here the line climbs rapidly following the slopes west of Elbert Creek to a point just below the small settlement known as Rockwood, located at Milepost 469.09. Between Mileposts 468.27 and 468.76 there is another stretch of 200-foot government easement right-of-way. At Rockwood an 1,106-foot sidetrack is accommodated

within a widening of the right-of-way to 200 feet while a wye extends beyond that strip through an easement arrangement.

Railroad-owned buildings at Rockwood have dwindled to a small section house, but the Western Colorado Power Company and its employees at the Tacoma Hydroelectric Plant maintain on the right-of-way several small buildings for the safe storage of supplies and equipment including the rail motorcars which are their sole means of transportation between Rockwood and Tacoma.

Just beyond Rockwood at Milepost 469.24 there begins a 26-mile long stretch of 200-foot right-of-way held as a grant from the U. S. Government in accord with the Act of March 3, 1875; however, not all the adjoining land is now Federally owned. At about Milepost 469.5 the line passes through a deep cut and emerges on a narrow ledge carved from an almost vertical cliff about 500 feet above the rushing waters of the Animas River which here fill the bottom of the gorge. This spectacular exposure plus 30° curves limits the speed of trains on the "High Line," as it is known to railroaders, to not over eight miles per hour for about one-half mile.

At Milepost 471.23 the line crosses the Animas River on a bridge consisting of one 130-foot steel span with frame approaches. The capacity of this bridge in particular limits the weight of locomotives on the Silverton line to about 120,000 pounds. Following closely the Animas River in its narrow tree-clad canyon for about a mile, the line reaches the station and an 864-foot siding at Tacoma.

Tacoma is the site of a Western Colorado Power Company hydroelectric plant. This powerplant, on the opposite bank of the Animas River, utilizes water from Cascade and Elbert Creeks impounded in Electra Lake on a high bench two miles to the northwest. Released from the lake, these waters reach the plant through penstocks falling over 1,000 feet. Tacoma further consists

of well-kept white, frame residences for power company employees and is inaccessible except by the narrow gauge line. Three of these residences lie east of the tracks while two, like the plant, are on the west bank of the river. The latter are connected with the line by a substantial double-span footbridge.

Beyond Tacoma the line follows closely the rushing river in its narrow valley. At Milepost 474.0 the valley floor widens considerably and a cluster of about nine weathered frame buildings east of the tracks comprise the facilities of a summer guest ranch entitled, "Ah! Wilderness." Mr. Ross D. McCausland, owner of this guest ranch, claims ownership of 80 acres of land. His title presumably recognizes the prior 200-foot government grant to the railroad. The ranch is accessible only by rail or on horseback.

The "Ah! Wilderness" meadow continues for about a half mile to Milepost 474.59 where the valley is constricted. There, just beyond Tank Creek, which supplies it, is Cascade Tank, another of the wooden stave water tanks essential to steam railroads. Again at about Milepost 475 the valley widens for about a half mile and the right-of-way consists of dry meadow and open stands of small ponderosa pine and aspen. At the upper end of this open valley, at Milepost 475.5 there is a state gauging station on the Animas River.

For about a mile, the canyon becomes narrow with increasingly precipitous walls. At Milepost 476 they tower darkly over the river and rails to a height of over 1,000 feet. Soon the valley floor widens again although its eastern wall continues to rise precipitously. Between Mileposts 476.5 and 477.5 open surroundings and a straight track provided the locale for the movie "Denver and Rio Grande," including the staged head-on collision between two venerable narrow gauge locomotives rigged with explosives to insure spectacular results.

At Milepost 477.5 the line recrosses the Animas River on a substantial steel span. A few hundred feet to the left there are three frame shacks posted to indicate that they are the base for proving operations at a "Silver Star Mine," by one Oscar Schaaf and several other persons. The exact location of the claim was not determined nor was it evident from the buildings or the railroad. Here, also, the line and the canyon turn more eastward and the mountains forming the canyon walls increase greatly in height. On the north and west, the mass and peaks of the West Needle Mountains wall in the river and the railroad and rise to heights of 4,000 to 5,000 feet above it for the next twelve miles. The great escarpment called Mountain View Crest flanks the line on the south for about five miles increasing in height above the rails to over 4,000 feet where the canyon of Needle Creek opens vistas of the spectacular 14,000-foot peaks of the Needle Mountains to the northeast. These peaks tower more than a mile above the rails along the Animas River.

Near Milepost 478.1 a crude footbridge over the river provides access to a small cabin believed to be associated with another claim worked by Oscar Schaaf. He lives in the group of buildings at Milepost 479.5 believed to be a relocation of a station and stockyards once located at Milepost 478.44 and called Cascade.

At Milepost 481, a cable across the river appeared to have provided limited access to a prospector's operations somewhere east of the Animas River. A little further up the line a modern three-span steel bridge built by the U. S. Forest Service connects the railroad with a trail leading up Needle Creek to Chicago Basin and the Needle Mountain section of the San Juan Wilderness Area. Below the mouth of Needle Creek at Milepost 482.7 over half a mile of the line had to be rebuilt following a flood in 1927 which

changed the channel of the river and carried away the original Needleton siding. At Milepost 482.5 on the west side of the canyon is the site of the Hunt or Needleton Slide which caused further adjustments of the trackage at this point.

Just above the mouth of Needle Creek near Milepost 482.9 a crude cableway crosses the Animas River to an old cabin believed to be associated with a long abandoned sawmill.

A suspension footbridge and a cableway across the river at Milepost 483.5 connect the narrow gauge with a group of log cabins, two used as summer homes, and several only partially completed. These cabins and a considerable acreage belong to Messrs. Willard A. Canode and Curtis C. Johnson of Durango. Their holdings appear to coincide with two old patented placer claims totaling about 300 acres and covering the valley floor from just above the Forest Service bridge at Milepost 481.2 to about Milepost 483.7. Almost all their holdings are now on the opposite side of the river from the railroad which is their only means of access. Needleton siding is now located at Milepost 483.8 while Needleton tank is at Milepost 484.2. Meanwhile, the line passes out of San Juan National Forest at about Milepost 483 and into an area administered by the Bureau of Land Management, but the status of the right-of-way is the same. Also, at Milepost 483.60 it crosses from La Plata into San Juan County.

Bureau of Land Management records indicate the presence of a patented mining claim 300' x 1500' east of the river near Milepost 484.4, but no evidence of structures or tunnels was observed from the line.

At Milepost 485.7 the line crosses an obvious avalanche track descending from the West Needle Mountains. This is the first of many indicating winter

trouble spots on the next ten miles of the line. The 13,000-foot summits on either side of the Animas River are at times less than three miles air line apart where the river's elevation is but 8,300 to 8,800 feet. Comparable depths in the Grand Canyon of the Colorado are reached only where the rims are over five miles apart.

At Milepost 488 there is a tarpaper shack on the right-of-way left of the tracks, while across the river an abandoned mine is visible. Bureau of Land Management records show no patented claims at this location.

Approaching Milepost 489 there is ample evidence on the slope to the west of a mud and rock slide which occurred during a cloudburst in July 1951. This slide buried considerable track and dammed up the river forcing reconstruction of several hundred yards of the railroad on a new alignment.

About half a mile beyond, a sign tacked to a tree and lumber and other supplies near the tracks mark the access point for a mining claim being explored by the Gaddis Mining Company. A permit to operate a specially equipped jeep on the narrow gauge rails to Silverton provides their only access to the claim on the canyon wall to the west.

Near Milepost 490 the line crosses to the east bank of the Animas River on a four-span steel bridge. Here, too, it enters an open area known as Elk Park, where the railroad maintains a short side track and a Wye. The latter was used extensively during snow removal operations in the slide-plagued canyon beyond during the years of winter operation of the line. Traces of foundations indicate the one-time presence of several buildings in Elk Park and the D&RGW had obtained a 20-acre station grounds grant in accord with the Act of March 3, 1875, at this location in addition to the 200-foot right-of-way. In 1949 the railroad subdivided its station ground holdings north of Elk Creek and south of the Wye into twenty long, narrow

lots on each side of a 50-foot right-of-way and sold them to twenty different parties by quitclaim deeds dated June 27, 1949. No use appears to have been made of any of these tracts except temporary camp sites by parties hunting elk.

Beyond Elk Park the walls of the inner gorge of the Animas River are consistently steep and close together. Avalanche tracks are frequent while there is barely room for both rails and river on the canyon floor. Near Milepost 491.7 at Whitehead Gulch, an emergency water spout fed by that tributary is maintained. At Milepost 492.5 the foundations of a former snow shed and extensive crib work designed to protect the line from the most persistent snowslides are still in evidence.

At about Milepost 494 the line passes the long unworked but patented mining claim at the mouth of Deer Park Creek. Beyond at Milepost 494.5 the right-of-way holds a ramshackle tippie still holding the lower end of an aerial tramway from an old mine several hundred feet up Cataract Gulch on the west wall of the canyon. Opposite Milepost 495.4 the remains of other old mine buildings cling to the precipitous walls of Deadwood Gulch. Here, from Milepost 495.12 to 495.52, the right-of-way narrows to 100 feet held in fee. From there to the end of the line at Milepost 497.12 the right-of-way consists of a variety of irregular parcels, some held in fee and some as government railroad grants and easements. Notable are the former Riddell Placer Claim of about 40 acres midway between the Animas River Bridge and the Mineral Creek Bridge; the 20-acre station grounds tract; and nine city blocks of the Silverton town site. Moreover, portions of the government grant right-of-way appear to be overlain by mining claims running back into the steep canyon walls.

The line crosses the Animas River for the last time at Milepost 495.25 on a long crib and timber bridge now in need of extensive repairs. At the foot of the canyon wall to the west of this bridge is the dump of an extensive, but now abandoned mine. Here also the canyon suddenly widens to become Baker Park, the valley in which lies the city of Silverton at 9,300 feet above sea level. The lower end of the valley is largely a cobblestone flat bearing the scars of floods, placer mining and more recent channel improvement work on the Animas River and Mineral Creek, its principal tributary, which the narrow gauge crosses at Milepost 496.1.

At Milepost 496.3 a Wye extending southwest about 750 feet along what was to have been 5th Street of the Silverton town site, is all that remains of the one-time connection with the long defunct Silverton Railroad to Red Mountain and Ironton. This Wye is now used to turn around trains as they reach Silverton in order to permit backing them past the Silverton depot at Milepost 496.6 and into a special track recently extended on 12th Street to Blair Street, only one block from the center of town. This spur was recently authorized by the town of Silverton in order to facilitate patronage of its business houses by passengers on the summer excursion train during its two-hour stop.

RAILS, TIES AND BRIDGES

The mainline track on this Durango to Silverton line was originally laid with 30-pound (to the yard) rail on unballasted and untreated pine ties. The increasing weight of locomotives and volume of traffic necessitated replacing the 30-pound rails with 52-pound rails and later with other sizes until the composition of the track became as follows:

- Mileposts 452 to 468 - 65-pound rail (a few 58-pound rails were observed at Milepost 463.8)
- Mileposts 468 to 472 - 85-pound rail
- Mileposts 472 to 476 - 65-pound rail (near Milepost 476 one-fourth mile of 70-pound rail was noted)
- Mileposts 476 to 485.8 - 52-pound rail
- Mileposts 485.8 to 497 - 90-pound rail

In general, the heavier the rail the better the condition of the trackage and the transition from 90-pound to 52-pound rail is most noticeable. However, with reasonable maintenance, any of these rail sizes is adequate for the light trains running at low speeds such as have been operated on the line in recent years. The maximum grade on the line is 2.5 percent.

Maintenance on the track and roadbed has been held to the minimum consistent with safety. The need for extensive replacement of ties and ballast was most noticeable between Durango and Hermosa. There straight, level track had received so little maintenance that the roadbed over marshy meadow land was heavily sodded while broken ties were common, but apparently not considered serious so long as those on either side held firm.

In its report to the ICC as summarized in Finance Docket No. 20943, the D&RGW stated that while the present condition of the line was satisfactory for the limited summer usage made of it, deficiencies precluding year-round

use did exist. It claimed that rehabilitation of the line would require the following:

Replace 20% of all ties	\$ 45,000
Rehabilitate subgrade	70,000
Replace culverts)
Repair five small and four large bridges) 20,000
Replace all 52 and 65-pound rails with used 90-pound rail	<u>312,400</u>
	\$447,400

ROLLING STOCK, TANKS AND STATIONS

Narrow gauge rolling stock which is available for assignment and use on the Durango-Silverton Line consists of the following:

Locomotives

Normally assigned to the run is No. 473 with No. 476 and No. 478 available as alternate power. All three are described as outside frame 2-8-2 Mikados, Class K28, cylinders 18" x 22", drivers 44", boiler pressure 200 lb. p.s.i., engine weight 113,500, tractive effort 27,540, built by the American Locomotive Company, 1923. In dead storage at Durango, reasonably intact and restorable is No. 464, the last of the Class K27, 2-8-2 Mikados. Built by the Baldwin Locomotive Company in 1903, it has 17" x 22" cylinders, 40" drivers, a 200 lb. boiler, weighs 108,300 lbs., and had a tractive effort of 27,000 lbs. Loaned to the city of Durango for display in Brookside Park is locomotive No. 315, a picturesque diamond-stack 2-8-0 Consolidation built by Baldwin for the D&RGW passenger service in 1895. It has 16" x 20" cylinders, 38" drivers, 145 lb. boiler pressure, weighs 64,000 lbs. and had a tractive effort of 16,606 lbs. Inoperative for several years and the veteran of several movies, it could still be restored for token operation or display. Two even older 2-8-0 Consolidations, once numbered 268 and 278, and built by Baldwin for the D&RGW in 1882, are now on display in Montrose and Gunnison, Colorado respectively. They may be restorable.

Baggage Cars

One regular baggage car and one combination baggage-passenger car are available. The latter, No. 212, is the oldest car on the line having been built in 1878 and retains many of the features of that date.

Coaches

Eight wooden passenger coaches are available. Four retain the open vestibule design of the 1880's while the others have had vestibules added. In almost all cases the original oil burning lamps have been replaced by flush electric fixtures while the ornate, plush, upholstered coach and parlor car seats have been replaced by plastic and chrome modern bus-type seats to increase the capacity of the train.

Miscellaneous

The D&RGW Railroad has ample stocks of all types of narrow gauge freight cars in service on the Alamosa to Durango line should any be desired for maintenance purposes. They also have extra motorcars and section crew push cars, etc., to assign to the Durango-Silverton line.

Facilities at Durango more or less essential to the operation of the Durango-Silverton line include: the commodious frame depot of 19th century design; the equally old ten-stall roundhouse and associated turntable; the water tank; coaling station; section houses and a car repair shop. Water tanks and minor structures have been mentioned at Hermosa, Tacoma, Cascade, and Needleton. Little used but still existing at Silverton are a depot, section house, water tank and coaling station.

HISTORY

Archeologists have reported several notable and scientifically important finds relating to pre-pottery Basket Maker, early Pueblo and later Indian cultures from the valley and cliffs along the Animas River between Durango and Rockwood. However, no prehistoric structures or sites with in situ exhibit potential are known.

Spanish and Mexican activity in the area was limited, and is remembered largely through the name of the principal river, El Rio de las Animas Perdidas (The River of Lost Souls) attributed to Father Escalante.

The first American activity in the Silverton area came in 1860 when a party lead by Captain Charles Baker prospected the area for gold and silver but became discouraged and left. High grade strikes by a party in 1870 renewed interest in the area. Everyone was in search of gold and no one found anything but silver. Once convinced, however, that silver was worthwhile, the miners opened the greatest mineral treasure chest in Colorado, one which was to produce metals valued at \$138,000,000 between 1880 and 1956.

The early miners worked their way into the area from the headwaters of the Rio Grande over 12,500-foot Stony Pass; and before the Brunot Treaty with the Utes was signed in 1873, many were run off or killed by the Indians. However, by the end of 1873, nearly 4,000 claims had been staked and about \$14,000 was produced in the district that year.

Real mining began in 1874, and by 1875, the whole region was full of men working feverishly and building the towns of Howardsville, Eureka, Animas Forks, Mineral Point, and Silverton. In 1874, Howardsville was the leading town and county seat of San Juan County, but in 1875 it lost those titles to Silverton.

The first newspaper, La Plata Miner, was established in July 1875. Sometime later it became the Silverton Miner and is now combined with the Silverton Standard established in 1889.

By 1879 Silverton boasted a population of near 3,000 and a hook and ladder company whose fire truck had been hauled in by hand over Stony Pass and welcomed by a Silver Cornet Band. However, its isolation was severe and in winter even mail delivery was highly uncertain.

Meanwhile, in 1871, the Denver and Rio Grande Railroad Company had begun building south and west from Denver a rapidly expanding system of lines on the three-foot gauge so adaptable to the mountain terrain of Colorado.

The early railroads of the United States were constructed on a variety of gauges from two to six feet. However, most narrow gauge lines used either a three foot or three foot, six-inch gauge while the predominant broad gauge was the present standard gauge of four feet, eight and one-half inches. This so-called standard gauge had its origin in the spacing of the chariot wheels of Imperial Rome and was preserved through its use on the wagons and carriages of England where it was also applied to the first railroads.

To railroad builders, particularly in the Rocky Mountains in the late 19th Century, the narrow gauge offered very definite advantages. The promoters of the Denver and Rio Grande pointed out that the narrow gauge system could be constructed for at least 37 percent less than could broad gauge in the same terrain. The proponents of narrow gauge also pointed out that these railroads could use the sharper curves necessitated by rugged terrain without sacrificing safety. They were also more efficient in that they required less equipment weight per ton of pay load. Rails were lighter and fuel efficiency greater in spite of the heavier grades tolerated.

In 1876 there were 81 narrow gauge railroads operating in 26 states. Four of these were in Colorado. By 1889 there were to be 234 companies operating 9,485 miles of narrow gauge lines compared with 1,030 companies operating on 114,148 miles of standard gauge tracks.

By 1879 the D&RG's dream of a line to Mexico and the Pacific had been largely frustrated by the Santa Fe. The lure of the wealth in the "Silvery San Juans" induced it to begin building westward from the San Luis Valley, and by July 27, 1881, its slender ribbons of English steel rail had reached the site of the present city of Durango, Colorado.

By this time, Chief Engineer R. E. Briggs of the Denver and Rio Grande had assembled a staff of true experts at locating and grading for narrow gauge construction. G. H. Wigglesworth, assisted by Edward Funke, located the line up the Animas River to Silverton, and grading crews went to work at several locations. On October 3, 1881, tracklaying north of Durango began and by December 11 had been completed as far as Rockwood, while grading had been largely completed to Cascade Park nine miles beyond near Milepost 477.

On April 28 and 29, 1882, the Colorado Coal and Iron Company (now the Colorado Fuel and Iron Company) rolled its first steel rail at Pueblo, Colorado. Of these, 58 tons of 30-pound rail were purchased by the D&RG for \$70 a ton, and shipped to the Silverton "Extension." Grading and tracklaying proceeded apace in the gorge of the Animas River, and on July 8, 1882, the first passenger train followed the tracklayers into Silverton and touched off a wild celebration which lasted several days. In that year, the "Silvery San Juan" produced \$20,000,000 worth of ore, and by 1884, the D&RG had 1600 miles of narrow gauge lines in Colorado and Utah.

Soon two or more trains a day each way were available between Silverton and Durango. Pullman and parlor car brought Silverton within 44 hours of Denver; a schedule which was reduced to 26 hours by the early 1900's.

Even the railroad was unable to insure Silverton against isolation, for snow avalanches and floods have frequently blocked the line for several weeks in spite of heroic efforts on the part of special snow removal and repair crews. The years 1909, 1911, 1927, and 1951 were notable for floods which washed out or buried large sections of track. Bad snow years included 1884, 1906, 1916, 1927, and 1932. In 1932, service had to be suspended from February to May.

The booming Silverton, to which the narrow gauge came, was laid out in an orderly gridiron pattern with wide, straight streets and already contained substantial buildings. Some of these and others erected soon thereafter are still in use. Structures of interest include the Congregational Church and manse built in 1880; the Grand (Imperial) Hotel, 1882; Silverton Miner's Union Hall, 1901; Court House, 1907; City Hall; and the home of the fabulous Otto Mears. Mears was the builder of the three branch railroads which once ran out of Silverton to Eureka, Gladstone, Red Mountain, and Albany as well as the Rio Grande Southern and the toll road to Ouray which was to become part of U. S. 550, "The Million Dollar Highway." Two blocks of false-front former saloons and sporting houses still flank Blair Street, reminders of days when up to forty such establishments ran day and night and attracted a lawless element which literally ran the town until vigilantes and the famous Bat Masterson, imported by the Town Council for the job, laid down the law. Numerous western movies have been made in this locale.

Silverton began as the heart of the "Silvery San Juan," but by the time of the Panic of 1893, gold had been found in many properties. By 1897, gold

made up half the mineral output of the region which was renamed the "Golden San Juan."

In 1890 and 1891, according to local papers, there was so much mining that even the railroad could not move the ore fast enough. This and great advances in mining machinery led to the establishment of concentration and reduction plants. Spectacular aerial wire tramways were built between mines and mills, and the day of the burro pack train ended. By 1956, gold production had totaled some \$39,000,000, while annual production of all minerals had dropped to \$597,000, and lead and zinc had replaced the more precious metals as the staple ores of the district.

Most of the mines and mills are now closed and buckets seldom sway along the 10,000-foot tramway over Arastra Gulch. Of the boom towns of the Silver Era, only Silverton remains with about 1,000 citizens; but the whistle of the D&RGW narrow gauge still echoes from the canyon walls during summer days when its 375 odd passengers ride through one of America's most scenic canyons to the seat of unique and historic San Juan County.

SCENIC SURROUNDINGS

While much of the past and current public interest in the Durango-Silverton Line stems from its character as a relic of a past era, the spectacular scenery available to its passengers was recognized long before narrow gauge railroads became curiosities.

From the Durango depot at Milepost 451.52 for some three miles the scene is distinctly urban to suburban in nature with only the clear waters of the Animas River to hint at things to come. For the next eight miles, the foreground scenes are pleasantly pastoral with increasingly high cliffs of buff to red sedimentary rocks or steep timbered slopes in the near distance beyond the meadow lands of the river bottoms.

After crossing Hermosa Creek at Milepost 462.43 the line climbs along the timbered west side of the valley providing more sweeping and pleasing but not spectacular vistas across the ranch land in the valley to the timbered mountains beyond.

"Spectacular" becomes a descriptive must just beyond Milepost 469 as the train suddenly emerges on the narrow granite ledge of the "High Line" 500 to 700 feet directly above the rushing waters of the Animas River in its red granite gorge. While this gorge cannot compare with the Royal Gorge or the Black Canyon in precipitous depth, it provides a significant beginning to a 27-mile journey through a wilderness that has never held a motor road and even today is separated by from two to six miles of rugged mountains from the nearest road.

Beyond the "High Line" the scene in the canyon of the Animas is one of pleasing variety. Ever changing are the vistas of the river. Roaring cascades confined by overhanging granite walls give way to broad riffles bordered by

birch, willow and aspen with fir or pine-clad slopes above. Small parks and glades open suddenly ahead of the train and end without warning at the next bend.

By Milepost 480 the rails and the river are walled in by the steep slope of the West Needle Mountains rising 5,000 feet on the north and west while the steep timbered slope and beetling crags of Mountain View Crest on the south appear even higher than the 4,000 feet indicated by relative elevations. Ahead turns of the stream and rails reveal changing views dominated by the sharp peaks of the Needle Mountains--peaks which challenge the mountaineer to explore their bases and scale their walls. In an eight-mile square area east of Needleton a score of peaks exceed 13,500 feet while four more top 14,000. Carved from ancient quartzites by glacier and stream the Needle Mountains and their northern wall called the Grenadier Range are among the nation's most rugged and little known. Cradled in the cirques between them a dozen clear water lakes sparkle in the sun at elevations of over 12,000 feet. This is the western end of the great San Juan Wilderness Area and is most accessible from the narrow gauge near Needleton.

Beyond Needleton the canyon of the Animas is notable for its wild isolation. Timbered slopes give way to avalanche tracks and they in turn to beetling cliffs. Between Milepost 486 and 487 views of Mount Garfield at the western end of the Grenadier Range dominate the scene ahead. Elk Park opens wider vistas. Again Mount Garfield dominates views to the south while aspen-clad slopes or steep cliffs hide all but the tips of Sultan and Grand Turk Mountains among its other 13,000 foot neighbors.

From Elk Park to Silverton the canyon is seldom beautiful, but always impressive. The mountains that flank it are more threatening than spectacular and they bear the scars of countless avalanches and of man's urgent

quest for silver and gold. Views from Silverton itself are of the same order and particularly to the southwest, where Sultan Mountain rears its hoary head behind an avalanche marked but heavily timbered slope, the scene is one of Alpine beauty.

Thus, in view of the varied and spectacular scenery available only to those who ride the Durango-Silverton line, and of the large area of uniquely rugged and lofty mountain terrain which it alone makes accessible, the narrow gauge takes on a large measure of significance.

GEOLOGY

It is believed that the major scientific values associated with the Durango-Silverton narrow gauge and its surroundings are those contained in its geological and physiographic features. N. M. Fenneman, in his Physiography of Western United States, N.Y. 1931, pages 121-122, has summarized the physiography of the Needle Mountain Uplift through which the Canyon of the Animas is formed as follows:

"Structure and General Relations - South of the San Juan Mountains proper is an almost circular area 20 miles in diameter shown on the geologic map as consisting of pre-Cambrian rocks, largely granite. As the surface of these rocks is essentially as high as the San Juan Mountains and since in the latter the same rocks are buried beneath many thousand feet of lava, it follows that the outcrop of these pre-Cambrian rocks represents a pronounced structural dome. The same rocks beneath the adjacent Colorado Plateau on the west and south, whose surface is 4,000 to 5,000 ft. lower are buried by thousands of feet of sediments. From this granite upland, therefore, the strata dip away in all directions but especially west and south toward the Plateau province. In a belt 5 to 10 miles wide on the south, Paleozoic limestones are exposed in more or less disturbed and dipping strata. South of that are the east-west hogback ridges and cuestas of Cretaceous strata which soon flatten out beneath the Colorado Plateau. The strip of dipping and much dissected strong Paleozoic rocks belonging to the Mountain province gives way, somewhat abruptly, to the less dissected plateau on the granite. A similar belt on the west of the granite dome is 10 to 15 miles wide and limited by a north-south line connecting the Rico and La Plata Mountains. The line which separates these mountains from the Colorado Plateau is nowhere far from the edge of the Dakota sandstone which is the essential substratum of the plateau for many miles to the west.

"Topography - The summits of the main Needle Mountain Uplift embrace two types of topography. The granite portion is in part a lofty plateau 11,000 to 12,000 feet high, trenched to a depth of 3,000 to 4,000 feet by the south-flowing Las Animas River, but, over considerable areas, little dissected. Here and there on its surface are remnants of Paleozoic rocks still in their original horizontal position. The granite plateau is an ancient peneplain now being resurrected and exposed to dissection. That it should still retain in some degree its level character shows the recency of the last uplift.

"The northern and eastern margins of the pre-Cambrian mass consist of quartzite. On this and adjacent parts of the granite stand the Needle Mountains, known in the older literature as the Quartzite Mountains, 'almost unequaled in this country in altitude and boldness.' Their steepness is due primarily to the nature of the rocks from which they are carved. It has been intensified by glaciation but these mountains were no more severely glaciated than the mountains of volcanic rock a few miles to the north in which broader summits and more massive forms prevail."

This indicates exposures of features in the Animas Canyon of considerable interest geologically ranging from highly mineralized volcanic rocks in the vicinity of Silverton and Mesozoic and Paleozoic strata near Durango to the Pre-Cambrian mass of the Needle Mountains.

FLORA

The vegetation along the narrow gauge from Durango to Silverton is fairly typical of the Southern Rocky Mountain region at elevations of from 6,500 to 14,000 feet. Conditions have been altered by ranching and irrigation in the lower valley from Durango to Hermosa, but the native deciduous plants and trees such as narrow leaf poplar, aspen, alder, willow, scrub oak, sumach and mountain maple are still common. Conifers range from juniper and pinyon pine on dry lower slopes, through ponderosa pine, Lodgepole pine and Douglas fir to Alpine fir and Engelmann spruce on the higher slopes and valleys. Flowering plants run the gamut from cacti and yucca to Indian paintbrush, penstemon, primrose and columbine.

FAUNA

Due to the isolated character of the middle section of the Animas River Canyon, virtually all the native fauna still exist in some numbers. Chipmunks, ground and tree squirrels, muskrat, beaver, rabbits, bobcats, mountain lion, black bear, mule deer and elk are still common; while bighorn sheep and grizzly bear, although rare, still survive in this general area. From Needle Creek to Mount Garfield the narrow gauge closely parallels the west end of the great San Juan Wilderness Area and is separated by only five miles of mountain wilderness from the San Juan Grizzly Bear Management Area, last foothold of those great bears in the Southern Rocky Mountains.

LAND STATUS

Of the 45.61 miles of right-of-way between Mileposts 451.52 and 497.13, 29.58 miles or 727.9 acres are held as a grant from the Federal Government under the terms of the Right-of-Way Act of March 3, 1875. Of the remaining 16.03 miles, about half consists of easements totaling 117.7 acres and half of lands held in fee simple. The latter total 124.5 acres and are estimated by the D&RGW to have a value of \$16,797.50.

Present and future operation of the line is and may be seriously affected by the status of portions of the right-of-way and adjacent lands. The fee right-of-way within the city of Durango (including the former Animas City) is adequate for operational purposes but offers no opportunity for the preservation of historic or scenic values.

The fee right-of-way between Mileposts 456 and 464 seems adequate for most purposes except preventing the future intrusion of billboards and other undesirable structures.

The 200-foot right-of-way grant from the Federal Government between Mileposts 464 and 483 is probably adequate since most of the adjoining land is Federally owned and administered by the U. S. Forest Service. Absence of commercially valuable timber on the slopes of the Animas River Canyon should make feasible classification of those areas outside the right-of-way by the Forest Service in such a manner as to insure scenic protection. However, extinguishment of such private holdings as "Ah! Wilderness," the Schaff claims, and the Canode-Johnson tracts appears necessary to the proper control of the scenic surroundings, development sites and operation of the railroad. Mr. Curtis C. Johnson testified at the ICC hearing that they paid \$25,000 for the Needleton property and now value it at twice that amount.

Status of the right-of-way of the line between Rockwood and Silverton is further complicated by the reservation of lands by Power-Site withdrawals. Much of the Animas River Canyon between Rockwood and Tacoma and tracts west of the line near Mileposts 475 and 477 are covered by Power Withdrawal No. 219. Moreover, virtually all the canyon between Mileposts 484 and 496 is included in "Temporary Power-Site Withdrawal No. 2," approved by the Secretary of the Interior, May 15, 1909 and still in force. Elimination of the Tacoma Power Plant in the foreseeable future does not appear feasible, but its expansion should be discouraged.

The sections of 200-foot right-of-way grant between Mileposts 483 and 495 are largely public domain under the administration of the Bureau of Land Management. Mining claims overlapping it appear to have been permitted throughout the Government grant area, so long as they did not interfere with railroad operations and some sections are still open to such intrusion by the redevelopment of old patented claims. However, the filing of new claims on most of the Canyon lands administered by the Bureau of Land Management is prohibited by the old Power-Site Withdrawal No. 2 previously mentioned. No evidence of recent serious consideration of power site development in the Animas Canyon was found.

Sale by the D&RGW of 20 lots from the former Elk Park Station grounds to individuals could complicate operations and prevent desirable uses of the Elk Park area unless ownership could again be consolidated in the hands of the operating organization.

Railroad right-of-way station grounds and related holdings in the Silverton area appear adequate for the maintenance and operation of necessary terminal facilities. Adjacent lands both in and near the Silverton Town Site are largely in private ownership.

ECONOMIC STATUS OF THE LINE

The close of World War II found the Silverton Branch operating the year-round, snow slides permitting, but on a mixed train twice-a-week or less schedule. Ore shipments from the Shenandoah-Dives Mine were the principal inducement to continue winter operations while "discovery" of the line by railroad fans was beginning to provide considerable summer passenger traffic.

Closing of the Shenandoah-Dives Mine and Mill, and floods in 1951 and 1952, reduced operations to their lowest point and resulted in the D&RGW's suspending all winter operations without securing permission from the Interstate Commerce Commission.

By 1952, tourist interest had induced the management of the line to increase the train's passenger facilities considerably, and in 1953, summer operations were stepped up to thrice weekly.

In 1955, the D&RGW began active promotion of the line as a tourist attraction and for the first time in decades seven-day-a-week operations were resumed during the summer months.

The tables of data furnished by the railroad company and updated to include data given at ICC hearings reproduced as pages 40 to 43 are largely self-explanatory and give a reasonably clear picture of the economic status of the Durango-Silverton Line with but one major omission, ad valorem taxes.

Those portions of the State of Colorado's ad valorem tax on the D&RGW Railroad Company's properties in 1958, ascribed to the Durango-Silverton Line and returned to the affected counties were, in round figures: San Juan - \$26,500, and La Plata - \$51,600, a total of over \$78,000 per year. When that figure is compared with the "Earnings Value of Branch Line to System" figures, it is apparent that even in such years of virtual capacity operation as 1956,

1957 and 1958 the line lost money. The more realistic passenger rate charged since 1959 appears to have put the operation in the black for the first time. Meanwhile, belief by railroad officials that the Company's over-all tax assessment would not be reduced by an amount comparable to \$78,000 in the event they abandoned the line had been a factor influencing them against instituting abandonment proceedings. Neither have officials of the D&RGW overlooked the fact that their company benefits indirectly from hundreds of thousands of dollars in additional tourist expenditures made in Durango and Silverton by narrow gauge passengers.

The Silverton Branch has a listed book value of \$929,193 exclusive of equipment. The D&RGW engineering department has estimated its salvage value at \$404,000 less salvage costs of \$80,400.

As a part of the D&RGW Railroad System, the Durango-Silverton Line is subject to some control by the ICC in such matters as interstate freight rates and authority to abandon. Since the passenger traffic and service is wholly intra-state the rates charged for the Durango-Silverton excursion may be changed at will by the carrier. Also, all regular employees and operations of the D&RGW are covered by various provisions of the Railroad Retirement Act and agreements with the Operating and Non-Operating Brotherhoods. These cost-increasing controls would probably not apply if the line were operated entirely as a seasonal tourist attraction by a non-profit agency.

The D&RGW has, in its operation of the Durango-Silverton Line, encountered problems which will be of concern to any organization considering its operation. As indicated by figures in Tables 2 and 3, the annual cost for the Maintenance of Way and Structures is subject to severe variations. This is due to such unpredictable by-products of weather conditions as floods, snow, or earth slides and falling rock. Major annual maintenance work such as snow removal

or major repair of bridges could be done through contractors owning the necessary equipment, but a crew headed by experienced railroad maintenance personnel would be needed for about half of each year.

Maintenance of equipment presents no special problems so long as the D&RGW continues operations between Durango and Alamosa and maintains shops and skilled personnel at one or both locations. Thereafter specialized repair facilities would have to be established at Durango and all replacements or additions to rolling stock brought in by truck. Steam locomotives are notably long-lived and dependable and can be reconditioned and kept in operation indefinitely. With adequate maintenance, coaches, even those constructed of wood, can similarly be kept in service indefinitely.

Safely loading and unloading capacity crowds of 380 passengers at Durango and Silverton and partially at intermediate scenic view stops is another problem. Depot facilities designed to handle 20 percent of that volume of traffic; open vestibule coaches; and over-capacity crowds, who will literally fight to get on board, complicate the problem, especially at Durango. Advance sales of tickets to the capacity of the train are frequently made, but cancellations are numerous enough to result in queuing of people hoping to get on at the last minute. Change to a reserved and numbered seat system was being considered, but some D&RGW personnel felt that it would complicate rather than alleviate the situation.

The related problem of increasing the line's passenger capacity to take advantage of the demand has been only partially met by substituting modern city transit bus-type seats for the more attractive, comfortable, but space consuming plush upholstered, turn-over, or adjustable coach and parlor car seats original to the period coaches. No additional cars are available and lengthening the train very much is probably impractical due to the limited capacity of available locomotives.

The D&RGW still furnishes intermittent demand freight service in season to the powerplant at Tacoma and to such isolated residents as those at "Ah! Wilderness," Oscar Schaaf, Johnson and Canode near Needleton, and the Gaddis Mining Company. Some of these firms and individuals have also been granted permits to operate motorcars or specially equipped jeeps over specified portions of the line. It was evident during an off-season inspection trip that both authorized and unauthorized rail motorcars were being used on all parts of the line. Such trespass was apparently ignored during the off season, but could become a serious problem if not controlled. Continued rail connection with the nearest highway is vital to the operation of the Tacoma powerplant.

TABLE NUMBER 1

THE DENVER AND RIO GRANDE WESTERN RAILROAD COMPANYSilverton Branch
Passenger Operations 1947 through 1959

<u>Year</u>	<u>No. Trips</u>	<u>Psgrs. Handled</u>	<u>Aver. No. Psgrs. Per Trip</u>	<u>Gross Revenue</u>	<u>Aver. Rev. Per Trip</u>	<u>Psgr. Rev. Per Train Mile</u>
1947	50	3,444	69	\$ 6,741.20	\$ 134.82	\$ 1.49
1948	36	2,814	78	5,227.98	145.22	1.61
1949	16	1,882	118	3,666.36	229.13	2.54
1950	30	4,445	148	11,017.24	367.24	4.06
1951	18	2,424	135	6,143.85	341.33	3.78
1952	21	4,911	234	15,524.50	739.24	8.17
1953	48	12,264	255	34,621.00	721.27	7.95
1954	59	14,945	253	43,885.00	743.81	8.23
1955	81	20,352	251	53,768.00	663.84	7.36
1956	94	23,845	254	59,973.25	638.01	7.06
1957	81	24,699	305	88,425.00	1,091.66	12.08
1958	95	32,334	340	112,889.00	1,189.47	13.16
1959	97	35,588	367	166,283.00	1,714.25	17.63
# 1960	--	37,000	--	168,216.00	--	--

Note: Round trip adult fare: 1947-1956, \$3.00; 1957-58, \$4.00; 1959, \$5.00

According to Finance Docket No. 20943 (ICC), "For the first nine months of 1960 the total branch line revenues amounted to \$168,216, the branch line expenses were \$76,605 and the net branch line operating revenues were \$91,611. The net revenue to the system from freight handled over the branch line amounted to \$2,704, and the net return to the system from branch line operations amounted to \$94,315." Compare these figures with those on Table No. 2 for previous years.

TABLE NUMBER 2

THE DENVER AND RIO GRANDE WESTERN RAILROAD COMPANY

Silverton Branch
Revenues, Expenses and Net Earnings
Years 1959, 1958, 1957 and 1956

<u>SYSTEM REVENUES</u>				
	Year 1959 #	Year 1958	Year 1957	Year 1956
<u>Freight</u>				
Forwarded	\$ 69	\$ 368	\$ 437	\$ 1,339
Received	5,430	2,042	1,560	2,245
Miscellaneous	--	--	--	--
Total Freight	<u>\$ 5,499</u>	<u>\$ 2,410</u>	<u>\$ 1,997</u>	<u>\$ 3,584</u>
<u>Passenger</u>				
Train Concession Privilege	\$ 1,163	\$ 1,059	\$ 624	\$ 458
Passenger (Tickets Lifted)	159,621	109,420	85,798	60,739
Total Passenger	<u>\$160,784</u>	<u>\$110,479</u>	<u>\$86,422</u>	<u>\$61,197</u>
Total System Revenues	<u>\$166,283</u>	<u>\$112,889</u>	<u>\$88,419</u>	<u>\$64,781</u>
<u>BRANCH LINE</u>				
<u>Freight Revenues</u>				
Forwarded*	\$ 61	\$ 361	\$ 156	\$ 357
Received*	1,998	1,099	1,180	1,003
Miscellaneous	--	--	--	--
Total Freight	<u>\$ 2,059</u>	<u>\$ 1,460</u>	<u>\$ 1,336</u>	<u>\$ 1,360</u>
<u>Passenger Revenues</u>				
Train Concession Privilege	\$ 1,163	\$ 1,059	\$ 624	\$ 458
Passenger Fares (Tickets Lifted)	159,621	109,420	85,798	59,973
Parlor Car	--	--	--	766
Total Branch Line Proportion of Revenues	<u>\$162,843</u>	<u>\$111,939</u>	<u>\$87,758</u>	<u>\$62,557</u>
<u>Expenses</u>				
Paid Motor Carriers	\$ 86	\$ 92	\$ 95	\$ 174
Maintenance of Way and Structures	43,541	14,572	51,624	11,705
Maintenance of Equipment	8,348	6,925	11,489	4,821
Transportation Expenses	21,690	31,265	17,566	16,166
Payroll Taxes	4,451	2,123	4,268	1,483
Specific Advertising	711	614	1,830	1,767
Total Branch Expenses	<u>\$ 78,827</u>	<u>\$ 55,591</u>	<u>\$86,872</u>	<u>\$36,116</u>
Net Branch Line Operating Revenues	<u>\$ 84,016</u>	<u>\$ 56,348</u>	<u>\$ 886</u>	<u>\$26,441</u>
*Revenue ton mile prorate minimum 25%				
<u>BALANCE OF SYSTEM</u>				
Revenues (Freight)	\$ 3,440	\$ 950	\$ 661	\$ 2,224
Expenses (50% of Revenues)	1,720	475	330	1,112
Net Revenue Balance of System	<u>\$ 1,720</u>	<u>\$ 475</u>	<u>\$ 331</u>	<u>\$ 1,112</u>
<u>EARNINGS VALUE OF BRANCH LINE TO SYSTEM</u>				
Net Return to System from Branch Line	\$ 85,736	\$ 56,823	\$ 1,217	\$27,553

1959 Figures from Finance Docket No. 20943

TABLE NUMBER 3

THE DENVER AND RIO GRANDE WESTERN RAILROAD COMPANYExpenses Incurred in Operation of the
Silverton Branch
Years 1958, 1957 and 1956

Page 1 of 2

	Year 1958	Year 1957	Year 1956
<u>Maintenance of Way and Structures:</u>			
Superintendence	\$ 81	\$ 217	\$ 51
Roadway Maintenance	5,806	35,008	5,595
Bridges, Trestles & Culverts.	77	656	--
Ties.	517	311	95
Rails	--	7	--
Other Track Material.	--	15	12
Ballast	--	--	--
Tracklaying & Surfacing	4,190	8,549	2,098
Fences, Snowsheds & Signs	--	--	--
Station & Office Buildings.	--	--	--
Roadway Buildings	92	--	--
Water Stations.	115	40	86
Fuel Stations	--	--	--
Shops & Enginehouses.	--	--	--
Communication Systems	--	8	101
Miscellaneous Structures.	--	--	--
Depreciation-Road Property.	2,741	2,493	2,493
Retirements-Road.	--	--	--
Roadway Machines.	260	1,204	327
Dismantling Retired Road Property	--	--	--
Small Tools & Supplies.	101	419	96
Removing Snow, Ice & Sand	164	1,272	169
Public Improvements-Maintenance	12	93	317
Injuries to Persons	--	--	--
Fire Insurance	104	104	104
Stationery and Printing	--	--	--
Health & Welfare Benefits	312	1,228	161
Total Maintenance of Way & Structures	\$14,572	\$51,624	\$11,705
<u>Maintenance of Equipment:</u>			
Steam Locomotives-Repairs	\$ 4,219	\$ 2,384	\$ 2,445
Diesel Locomotive Repairs-Yard.	56	--	--
Freight-Train Cars-Repairs.	61	32	73
Passenger-Train Cars-Repairs.	2,439	8,724	2,233
Work Equipment Repairs	--	--	--
Health & Welfare Benefits	150	230	70
Total Maintenance of Equipment	\$ 6,925	\$11,489	\$ 4,821

Expenses Incurred in Operation of the
Silverton Branch
Years 1958, 1957 and 1956

Page 2 of 2

	Year 1958	Year 1957	Year 1956
<u>Transportation:</u>			
Superintendence	\$ 82	\$ 229	\$ 99
Dispatching Trains.	--	--	--
Station Employees (includes overtime Durango Agent - \$327, \$212, \$291)	327	228	298
Station Supplies & Expenses	--	--	--
Yard Conductors & Brakemen - Durango			
Overtime - Passenger.	619	436	447
Yard Enginemen - Durango			
Overtime - Passenger.	402	274	277
Yard Switching Fuel - Durango			
Overtime - Passenger.	45	23	24
Train Enginemen - Wages	4,997	4,319	4,385
Train Fuel	2,472	2,032	2,243
Water for Train Locomotives	138	53	67
Lubricants for Train Locomotives.	151	133	124
Other Supplies for Train Locomotives.	69	72	63
Enginehouse Expenses - Train.	--	--	--
Trainmen-Wages.	7,470	6,288	4,831
Train Supplies & Expenses	4,083	3,110	2,503
Communication System Operation.	--	--	--
Stationery & Printing	225	282	265
Health & Welfare Benefits	106	72	40
Clearing Wrecks	--	--	--
Damage to Property.	--	--	--
Damage to Livestock on Right-of-Way	--	--	--
Injuries to Persons	10,079	15	500
 Total Transportation	 \$31,265	 \$17,566	 \$16,166
<u>Railway Tax Accruals:</u>			
Maintenance of Way & Structures	\$ 812	\$ 2,977	\$ 584
Maintenance of Equipment.	351	536	242
Transportation	960	755	657
 Total Payroll Taxes	 \$ 2,123	 \$ 4,268	 \$ 1,483
 Paid Motor Carriers.	 \$ 92	 \$ 95	 \$ 174

Budget and Statistics
July 15, 1959

SIGNIFICANCE AND NEED FOR CONSERVATION

In view of the foregoing, it was concluded: that narrow gauge railroads played a significant role in providing vital transportation to considerable segments of the United States; that one of the most significant of these segments was the mining country of western Colorado; that the Denver and Rio Grande Western narrow gauge line from Durango to Silverton is a fine example of narrow gauge railroad engineering, made a significant contribution to the development of the nation, and offers probably the last opportunity to preserve and operate with contemporary equipment such an example of the narrow gauge steam railroad. Moreover, the location of the Durango-Silverton line in an area of superlative mountain wilderness scenery adds much to its significance and potential for public benefit and enjoyment.

At its 1961 spring meeting, the Advisory Board on National Parks, Historic Sites, Buildings and Monuments judged the Silverton Branch of the D&RGW Railroad to have exceptional value in commemorating the history of this country under the Mining Frontier and Transportation and Communication Subthemes of Theme XV, Westward Expansion and Extension of the National Boundaries to the Pacific, 1830-1898.

Therefore, in order to commemorate the narrow gauge railroad as a significant medium of public transportation in America and to make possible the continued accessibility to the public of the scenic, scientific and recreational resources of Animas River Canyon and the Needle Mountains, the preservation and continued seasonal operation of the Durango-Silverton narrow gauge by some organization is definitely a matter of national public concern and interest.

BASIC OBJECTIVES FOR PRESERVATION OF VALUES

The basic objectives for any organization seeking to preserve the Durango-Silverton narrow gauge should include:

1. Preservation and restoration of the historic operating equipment, way and structures of the line.
2. Preservation of the scenic and historic resources of the adjacent area.
3. Provision of sufficient train service with restored historic, replica and other equipment to allow public enjoyment and appreciation of the Silverton line's historic and scenic qualities.
4. Provision of accurate and appropriate informational and interpretive materials and services regarding the historic, scenic, and scientific features of the narrow gauge line and its setting.

POSSIBLE SOLUTIONS TO THE PROBLEM OF PRESERVING THE SILVERTON BRANCH

Non-Federal

Perhaps the most desirable and appropriate solution to the problem of preserving the Silverton Branch would be continued operation by the D&RGW. However, this continued operation would need to be sympathetically managed with recognition of the previously mentioned "Basic Objectives for Preservation." It would in brief combine continued operation of the line as an interstate carrier with its operation and preservation as a functioning memorial to the historic contributions of the D&RGW System to the development of the Nation, particularly through its narrow gauge lines. Recognition of the line as a Registered National Historic Landmark would then be acceptable to the D&RGW as enhancing its attraction of profitable passenger traffic. Should the D&RGW find some of the non-operating aspects of this preservation project too much of a drain on the revenue from the line, it might arrange to have them taken over by a non-profit organization like the Helen Thatcher White Foundation.

In the event the provision of interstate freight service on the line is abandoned and the line is sold by the D&RGW, assumption of the remaining opportunity to operate and preserve the line by a non-profit organization would be in order. Somewhat less desirable, this latter solution also seems considerably less feasible.

The feasibility of both these solutions would be greatly reduced should the D&RGW abandon its Alamosa to Durango narrow gauge line and dispose of its related operating and maintenance facilities in Alamosa.

Federal

Suitability for National Park System Status

One end of the narrow gauge line is anchored in the small, but rapidly growing city of Durango, and is closely hemmed in by suburban development for

about four miles. The other end penetrates a region of proven resources of valuable minerals, the search for which was responsible for the line's being. However, the line, its equipment, and the larger part of its surroundings retain a high degree of scenic and historic integrity.

The Durango-Silverton line is a comprehensive unit of narrow gauge line historically, operationally, and scenically. Its termini are readily accessible to the public, while a large segment of the line is so isolated from all other media of transportation as to greatly enhance a portrayal of the line's historic function and importance. Moreover, nowhere in the National Park System is a unit of narrow gauge railroad, or an area of similar historic associations preserved.

The adaptability of the narrow gauge line to effective preservation, administration, and development as a unit of the National Park System poses many complex problems. However, from the standpoint of the historic and scenic values present for preservation, interpretation and public enjoyment, it appears uniquely suitable for that purpose.

Feasibility of National Park Service Administration

The feasibility of the administration of an historic railroad by the National Park Service has long been questioned by Service officials. Currently, this question in regard to the Silverton Branch is complicated by the uncertainty over the status of that line as a part of the D&RGW's interstate system.

In the event that the ICC approves its Examiner's recommendation to require the D&RGW to continue to provide both freight and passenger service on the Silverton Branch under ICC regulations from June 1 to October 1 each year, the possibility of the National Park Service taking over administration of the line seems very remote. Only with the acquiescence and cooperation of

the D&RGW could public support for such a move be obtained and responsible officials of the railroad company have expressed disinterest in participating in any arrangement to operate the line under Government ownership.

Similarly, should the ICC approve abandonment of the line as an interstate carrier, and its sale to the new non-profit Durango-Silverton Railroad Company be concluded, the cooperation of that latter group would be needed at least temporarily.

In any event, continued maintenance and operation of the line on a seasonal basis would be difficult, expensive, and perhaps impractical without the cooperation of the D&RGW. No other organization in the west has the facilities, equipment, and skilled personnel needed to restore, preserve, and to safely and efficiently operate the line, especially on a seasonal basis. For the Government to acquire all the facilities and equipment and employ the staff for independent permanent seasonal operation of the line is probably impractical. Unquestionably, it would be a complex and expensive operation involving personnel with skills not required elsewhere in the Federal Government.

RECOMMENDATIONS

1. That no proposal to include the Silverton Branch of the D&RGW in the National Park System be advanced so long as continued operation and preservation of the line and its historic values by private organizations seems assured. To this end, the private organization operating the Silverton Branch shall be encouraged to accept certification of the line as a Registered National Historic Landmark and to preserve it in accord with the conditions set forth in the application for said certification as well as the basic objectives for preservation of its values.
2. That in the event preservation through Recommendation No. 1 cannot be attained, authority should be sought for National Park Service participation through acquisition of the right-of-way and the development site lands (described on a following page); provision of related interpretive facilities and services; preservation of scenic and historic values while railroad operating facilities continue in private ownership. This formula might include designation of the area as a National Historic Site. It would insure preservation of historic values, retain the best qualified operating organization for the railroad and slightly reduce their tax load while continuing some tax return to the counties.
3. That, in the event the termination of operation and preservation of the Durango-Silverton line by the D&RGW or other private organization becomes imminent, the creation of a Narrow Gauge Railroad National Historic Site shall be proposed with Federal ownership of both lands and operating equipment. Details of this proposal would be worked out to utilize such cooperation by the private operator as might be available or provide for complete Federal operation if necessary.

4. That, in any event, the U. S. Forest Service and the Bureau of Land Management be requested to so classify their lands adjacent to the narrow gauge right-of-way as to provide protection for scenic and historic values. Such protection should be accorded to all Federal land within 500 feet of the tracks between Hermosa and Rockwood and within the rims of the inner gorge of the Animas River between Rockwood and Silverton, final description and classification of the lands to be determined by cooperative analysis.

SUGGESTIONS FOR DEVELOPMENT AND INTERPRETATION

Developments in the Canyon

Developments to be provided by the controlling organization for public use within the Animas Canyon between Rockwood and Silverton at three locations are suggested.

At or near the site of "Ah! Wilderness," Mileposts 474 to 475, it would seem appropriate to permit a number of well-spaced wilderness type camp sites for the use of fishermen and hikers. A simple camp operation using tent houses or unpainted board sleeping cabins and a mess hall designed to give the appearance of an old mining camp might also be found desirable there. A trail from this location to points on Mountain View Crest commanding spectacular views of the Needle Mountains would give fine back country experience to hikers or parties riding horses or more fittingly the mules or burros once used in pack trains to the early mines. This would require acquisition by the developing organization of the 80-acre "Ah! Wilderness" tract.

A similar development on the Canode-Johnson tract above the mouth of Needle Creek should be the most popular of the in-canyon centers since it is the logical point of access to the Needle Mountains for mountain climbers and other wilderness seekers. It is the most appropriate site for a development simulating a mining camp of the 1880's and again pack and riding mules or burros would be useful and fitting. Acquisition of the Johnson-Canode tract would be basic to the project.

The third site for a wilderness camp development would be Elk Park--a highly scenic spot in its own right and another point of access to the Needle Mountain wilderness. Acquisition of all private tracts in Elk Park would be necessary to protect and control such a development.

All these developments should be limited in capacity in order to control their impact on the surrounding wilderness and to minimize the effect of travel to and from them on the round-trip capacity of the narrow gauge excursion trains.

Interpretation

Conservation of the area's resources carries with it the responsibility for their adequate interpretation both as an aid to their preservation and to foster full enjoyment by future visitors.

Proper orientation of the visitor as he begins his ride on the historic narrow gauge is important but difficult to achieve. Installation of sound equipment in the train to permit reaching all passengers simultaneously with orientation talks and spot announcements offers a possible solution, but its installation and its use must be so planned as not to detract from visitor experience. The visitor's experience of riding a 19th Century train through a spectacular segment of the mountain country explored and exploited by the 19th Century miners must not be spoiled by untimely efforts to educate him. Perhaps an orientation talk covering the highlights of history, geology, and natural history during the first 30 minutes of the run north from Durango would suffice. Additional interpretive services in appropriate fields would be available at Durango and Silverton as well as the intermediate wilderness camps. This might include a narrow gauge museum at Durango and interpretation of the mining frontier era at Silverton. The latter two could be independent projects not provided by the controlling organization, but planned to complement each other and interpretation on and along the narrow gauge line.

Photographs
of
THE DENVER AND RIO GRANDE WESTERN
NARROW GAUGE
in Sequence From
Durango to Silverton
Colorado

* * * * *

DETAILED TOPOGRAPHIC MAP



Plate 1. Diamond Stack, narrow gauge, 2-6-0
Consolidation, built in 1895. Now in Brookside Park,
Durango, Colorado.



Plate 2. Open vestibule, narrow gauge coach built in
1880's still in service on the Durango-Silverton line.



Plate 3. D&RGW's No. 473 at Durango. One of three 2-8-2 Mikados built in 1923 which are used on the Silverton line.



Plate 4. The Durango depot and yards, looking north.



Plate 5. Turntable, round house and 480 and 490 class locomotives at Durango.



Plate 6. Looking northwest over the narrow gauge bridge over the Animas River at Milepost 452.25.



Plate 7. Looking north up the Animas River over the North Durango or Animas City districts. Note narrow gauge tracks following west bank of river.



Plate 8. Milepost 456, looking north - "Red Barn," dine and dance spot to the left.



Plate 9. Milepost 460.8 looking up valley on long tangent to Hermosa.



Plate 10. Milepost 462.43, Hermosa tank from the unique "Hall Truss" bridge over Hermosa Creek.

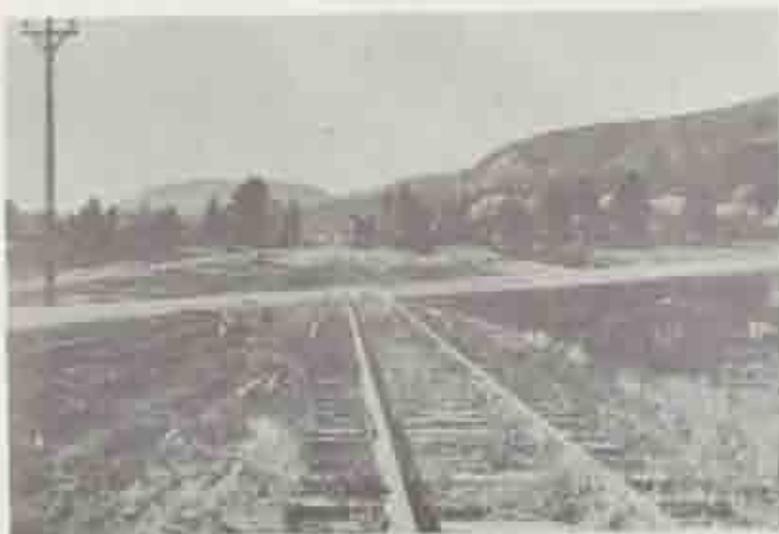


Plate 11. Looking south to Hermosa Station from the crossing of U. S. 550 at Milepost 462.6.



Plate 12. Looking southwest at Milepost 463. The Animas Valley Consolidated Ditch crosses the right-of-way here.



Plate 13. Looking east across the Animas River Valley near Milepost 463.8. Note ranches, highway 550, etc. in foreground.



Plate 14. Track breakages from falling rocks such as this case at Milepost 465.3 are reportedly rare.



Plate 15. Old highway crossing and pleasing curves of narrow gauge near Milepost 467.



Plate 16. Narrow gauge tracks on cliff above U.S. 550 at Milepost 467.5.



Plate 17. Looking east across U. S. 550 and Lake Shalona
at Milepost 468.



Plate 18. Looking northwest at the Wye and stock pens
at Rockwood. Hermosa Cliffs in the background.



Plate 19. Private houses at Rockwood. Looking east
inside the Wye.



Plate 20. At Milepost 469.9 the "High Line" following
a narrow ledge blasted from the cliff above the Animas
River.



Plate 21. View of the Animas River from the narrow gauge just above the box canyon and "High Line."



Plate 22. This bridge at Milepost 471.23 limits the weight of locomotives used on the Durango-Silverton narrow gauge.



Plate 23. Part of the residences for Western Colorado Power Company employees at the Tacoma hydroelectric plant. Milepost 472.3.



Plate 24. Looking downstream to the Tacoma power plant and footbridge.



Plate 25. Principal buildings of "Ah Wilderness,"
an 80-acre guest ranch at Milepost 474.0.



Plate 26. Straitaway in open area around Mile-
post 477.0 used for engine collision scene in
movie "Denver and Rio Grande."

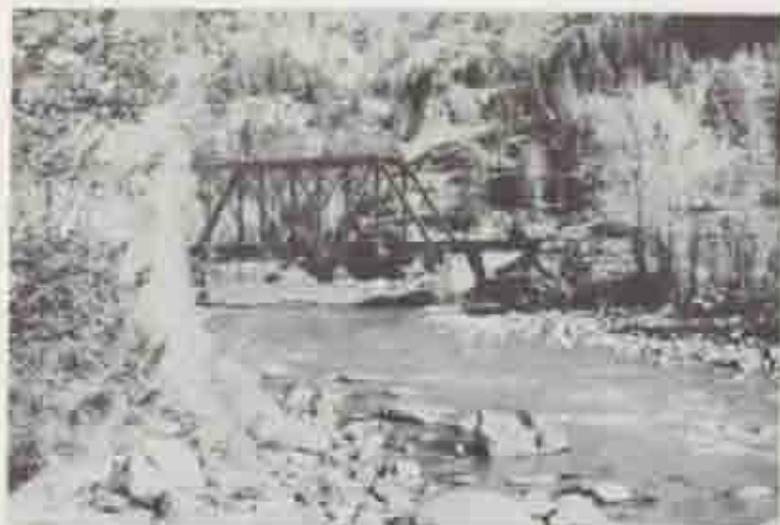


Plate 27. Bridge over Animas River. Looking up stream
from near shacks of the Silver Star Mine.



Plate 28. The Oscar Schaf place at Milepost 479.5.



Plate 29. Looking up the canyon from Milepost 479.6 to the Needle Mountains. Pigeon Peak 13,961; Turret Peak 13,819 and Mt. Bolus 14,079.



Plate 30. Forest Service bridge over Animas River to about Milepost 481 for the Needle Creek trail to Chicago Basin, etc.



Plate 31. Pigeon Peak towers more than a mile above the narrow gauge at Milepost 481.9.



Plate 32. Looking up canyon in the area of the Hunt Slide at Milepost 482.5 near the former site of Needleton Post Office.



Plate 33. Suspension bridge and cable-way over the Animas River to the Canode-Johnson cabins opposite Milepost 483.5.



Plate 34. Looking down canyon to the north wall of Mountain View Crest from Milepost 484.2.



Plate 35. Needleton Tank at Milepost 484.2.



Plate 36. Looking up canyon toward Mount Gerfield from about Milepost 484.5.



Plates 37 - 38. Looking up canyon toward Mt. Garfield
(13,065) from near Mileposts 486 and 487.





Plate 39. Abandoned mine across the river from the railroad and a tar paper shack near Milepost 488.



Plate 40. Up-canyon from slide which dammed up the Animas River at Milepost 489 in July 1951.



Plate 41. Bridge over the Animas River at Milepost 490,
just below Elk Park.



Plate 42. Looking down the canyon from Milepost 490.3
in Elk Park.



Plate 43. Looking northwest across Elk Park.



Plate 44. The lower switch of the Elk Park Wye
at Milepost 490.5.



Plate 45. Looking southeast from Milepost 491 to the peaks of the Grenadier Range.



Plate 46. The slide plagued inner canyon of the Animas River at Milepost 491.5.



Plate 47. Emergency water supply at mouth of Whitehead Gulch near Milepost 491.7.



Plate 48. Remains of snowslide control structures at Milepost 492.5 the most troublesome slide area.



Plate 49. Looking up canyon
at Milepost 492.6 to Grand
Turk Mountain.

Plate 50. The Animas
River, rails and Kendall
Mountain from Milepost 493.6.





Plate 51. Tippie of aerial tramway from abandoned mine in Cataract Gulch opposite Milepost 494.5.



Plate 52. Looking toward Silverton from Milepost 494.8.



Plate 53. Abandoned mine on the cliff opposite Milepost
495.4.



Plate 54. The narrow gauge bridge over the Animas River
at Milepost 495.69 near Silverton needs extensive repairs.



Plate 55. From the junction of Mineral Creek and the Animas at Milepost 496. Pigeon Peak, 12 miles below appears to block the canyon through which the narrow gauge passes.



Plate 56. Silverton with the slender steel of the narrow gauge traversing the flats in the foreground.

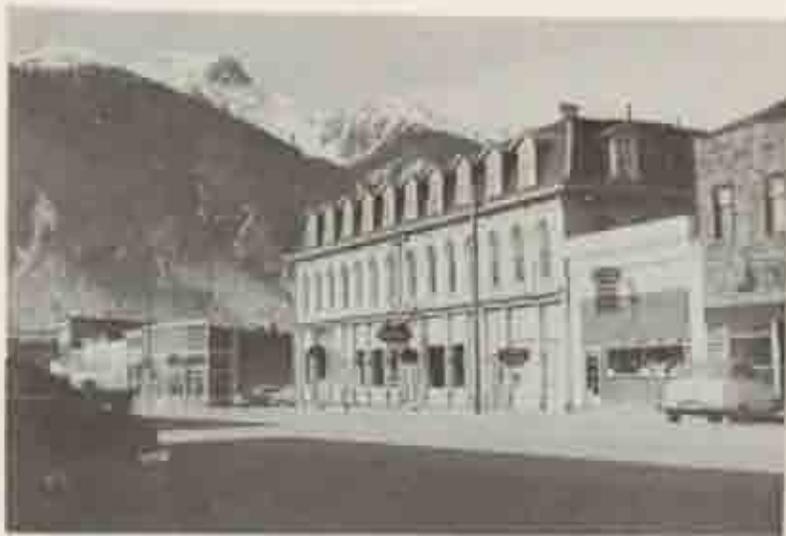
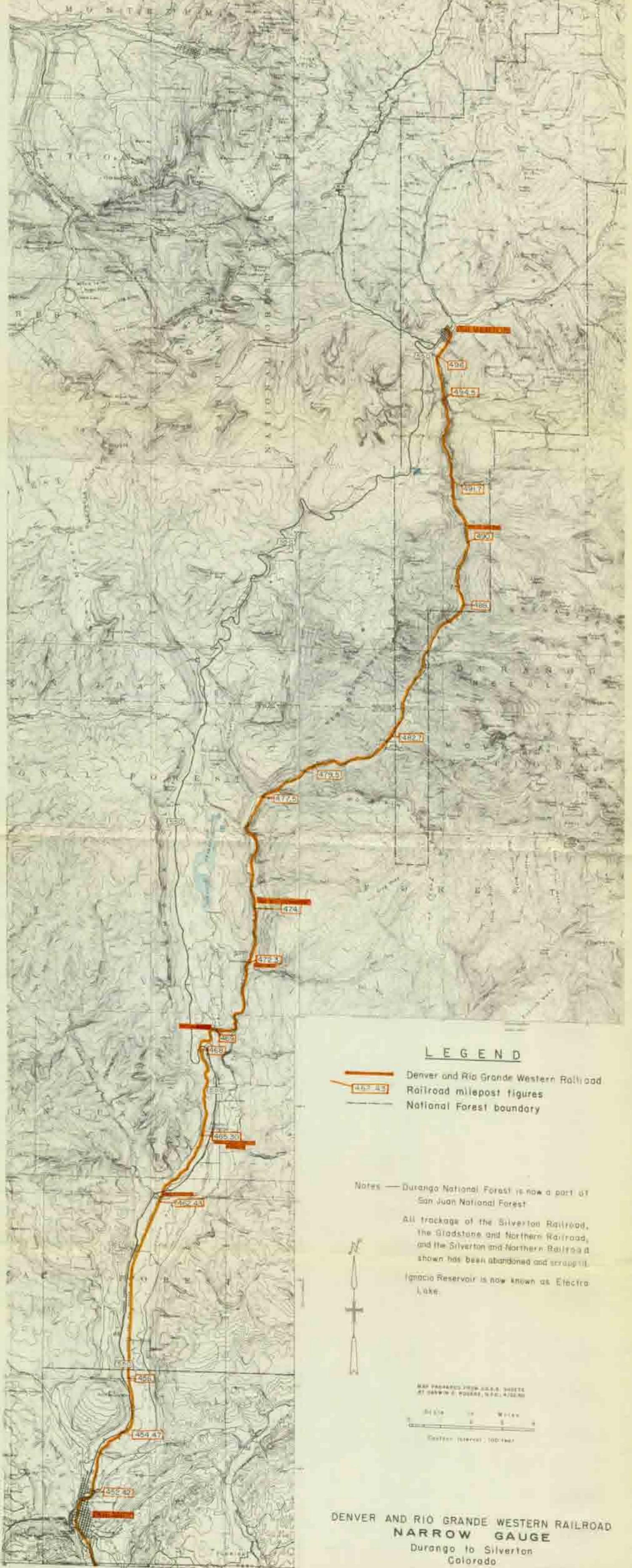


Plate 57. The Victorian splendors of the Grand Imperial Hotel built in 1882 are dwarfed by grandeur of Sulten Mountain south of Silverton.



Plate 58. We unloaded our motor car at Silverton's once busy depot for our inspection trip to Durango.



LEGEND

-  Denver and Rio Grande Western Railroad
-  Railroad milepost figures
-  National Forest boundary

Notes — Durango National Forest is now a part of San Juan National Forest

All trackage of the Silverton Railroad, the Gladstone and Northern Railroad, and the Silverton and Northern Railroad shown has been abandoned and scrapped.

Ignacio Reservoir is now known as Electro Lake.



MAP PREPARED FROM U.S.G.S. SHEETS BY GARWIN C. BOSSER, N.P.C. 472200



Contour Interval: 100 Feet

**DENVER AND RIO GRANDE WESTERN RAILROAD
NARROW GAUGE**
Durango to Silverton
Colorado

ON MICROFILM

299 / 20029