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COPY

GENERAL STATEMENT RELATIVE TO TRANSPORTATION
QUESTIONS IN ALASKA AND THE DEVELOPMENT OF THE INTERIOR
BY MEANS OF RAILWAY CONSTRUCTION.

COMPARISON OF "COPPER RIVER ROUTE" WITH OTHER
PROPOSED ROUTES.

Alaska is absolutely detached from the United States and can not be reached by any continuous "All American" railway. It is, however, barely within the range of possibilities that a railway from some point in British Columbia, east of the mountain range, say from Edmonton or Ashcroft, might be projected northerly through British Columbia and reach the Yukon Valley in the vicinity of Dawson. This line, even if constructed, would not be of general benefit to Alaska or to the commercial interests of the United States, as all branches of business would be almost entirely diverted to the keenly competitive cities of Canada. This condition also applies in principle to any other projected railway enterprise which would jointly occupy American and Canadian territory, in reaching the Tanana or Yukon valleys. The strip of coast land of Alaska extending from Mt. St. Elias on the 141st Meridian and extending easterly and southerly varies in width from twenty and forty-five miles. The great interior of Alaska as well as northern British Columbia is guarded against easy accessibility by a most rugged, lofty and glacial covered mountain range. Beginning at the southerly portion of Alaska the first break or pass entering American territory occurs at head of Lynn Canal where the Skagway River flows into the ocean. Up this river and over the White Pass, which has an elevation of about 2900 feet, the White Pass Railway has been built with tidewater terminus at Skagway. The road is about 112 miles in length and connects the tidewater with the Yukon immediately below White Horse Rapid. Only about twenty miles of this railway is constructed on American territory as the International boundary passes over the summit to White Pass. The railway, as a matter of fact, serves Canadian Yukon and portions of British Columbia and is but a small factor in the development of Alaska.

The second low summit, also near the head of Lynn Canal, occurs at the head of Chilkat river. This route starts at Haines Mission about 12 miles southwesterly from Skagway. By this route in the early days of the Klondyke excitement the Dalton trail was located, over which several herds of cattle were driven into the Yukon Country, to Fort Selkirk; thence to the Dawson markets by river steamer. This route would also be of little or no value to the American interests, as like the "White Pass Route" it is located only through a few miles of American soil and then enters British Columbia. While it is possible to reach American Territory over this route by passing through about 250 miles of Canadian Territory extending northwesterly from the border, it would serve principally to develop the coal, copper and other resources of the White river country on the British Columbia side. Even if this route should be extended through the White river country into the Tanana Valley on the American side, the line would be much longer and would be of comparatively little value to the great mining interests of Alaska in comparison with the extension of the "Copper River Route."

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The next break in the Coast Range is made by the Alsek river, which cuts its way through the St. Elias range and flows into the ocean at a point about 120 miles westerly from Skagway. This route would also occupy only a few miles of American territory and like the Haines Mission or Chilkat Route, would serve only as

develop the ~~Wanush~~ ~~River~~ country in British Columbia. The route up this river is not regarded as being feasible from a transportation point of view, as the construction would be extremely expensive, and no harbor or shelter for vessels is furnished at the mouth of the river.

Any "All American" route to the interior of Alaska must leave the shore at some point west of Mt. St. Elias on the 141st Meridian. The coast range west of Mt. St. Elias is called the Chugach Range and forms the great barrier between tidewater and the interior of Alaska. This range which extends from southwestern British Columbia northerly and westerly along the coast finally terminates in the Aleutian Peninsula and Islands. This long peninsula and chain of islands have formed what may be called an immense sea-wall which distinctly marks two climatic conditions of Alaska along the southern coast, as between the Pacific Ocean and great Bering Sea. Along the southern coast of Alaska and this peninsula, flows the warm waters of what is known as the Japan current. Nearly all of the harbors which are situated directly on the south coast are accessible to steamers during the entire year, as the warm Japan current prevents formation of ice. To the northward of the great natural sea-wall of the Aleutian Peninsula lies the landlocked and comparatively shallow body of water known as Bering Sea, which connects with the Arctic Ocean at the narrow pass between Alaska and Siberia just south of the Arctic circle through Bering Strait.

As the Bering Sea is protected from the modifying Japan current, it becomes frozen over and the ports of Bering sea are not accessible to steamers between November and latter part of June. It also receives an enormous inflow of silt laden fresh water from the two great rivers - the Yukon and the Kuskokwim. The two principal ports on the Bering Sea are St. Michaels and Nome. The first is on an island near the mouth of the Yukon and is the transfer point in summer for freight from the ocean steamers destined to Yukon River points. This is known as the "all water" route from San Francisco, Seattle and other Pacific ports, to the mining camps along the Yukon and Tanana rivers.

Nome is on the most westerly projection of the mainland of Alaska, known as Seward Peninsula. For over ten years it has been one of the most important factors in the production of placer gold. It is dependable for its annual supply of provisions, fuel, machinery, etc. by ocean steam navigation and has only about four months of open water. For this reason the large mining communities at Nome and the entire Seward Peninsula have been deeply interested in the question of securing railway communication with the open ports on the south coast of Alaska. The Alaska Short Line Company was incorporated for the purpose of building from Iliamna Bay on south-westerly Cook's Inlet across the Kuskokwim and Yukon valleys to Seward Peninsula and Nome. The project has not been carried out. Iliamna Bay is not a first-class harbor in winter.

Through that portion of the formidable, lofty, ice covered coast range of Alaska, lying between Lynn Canal and the Aleutian Peninsula, only two great rivers have broken through to the coast.

It is a recognized fact that the slight fall of large river valleys afford the natural gateways to the interior of a mountain surrounded country. If they have suitable harbors at the meeting with the ocean, their gently sloping river valleys form the line of least resistance for all traffic and are invariably utilized for

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It is a recognized fact that the slight fall of large river valleys afford the natural gateways to the interior of a mountain surrounded country. If they have suitable harbors at the meeting with the ocean, their gently sloping river valleys form the line of least resistance for all traffic and are invariably utilized for great trunk railway systems. The water grade route is invariably the winning route as compared with lines of traffic over mountain ranges.

The two rivers which form natural gateways to the interior are the Copper and the Susitna. The latter river enters Cook's Inlet at its extreme northern end and about 170 miles distant from the ocean. The upper portion of Cook's Inlet receives a large quantity of fresh water, is comparative shallow and is frozen over a considerable portion of the year and at all times is subject to the great tides which have made Cook's Inlet famous. It was doubtless largely with the object of avoiding these great handicaps to navigation which lead the promoters of the Alaska Central Railway to select the present town of Seward, at the head of Resurrection Bay, as the ocean terminus for their railway. To reach the open harbor at Seward, however, from the mouth of the Susitna, over 130 miles of expensive railway will be required. While the valley of the Susitna is more broad and regular than that of the Copper River it does not present the same terminal advantages for any railway system extending to Tanana and Yukon Districts as does the vicinity of the mouth of the Copper River in Cordova Bay, which has been utilized by the Copper River & Northwestern Railway. The prime requisite of any extensive railway system extending from navigable water and dependable upon connection with ocean steamer traffic, is the securing of an accessible, safe and commodious harbor, which can be utilized for commerce practically every day of the year and at a minimum of expense per ton for cargoes handled.

Throughout the entire commercial world where served by water transportation, certain requirements are vitally necessary or of such great importance as to materially effect the commerce of the port. First, there must be a necessary depth of water for large vessels either as provided by nature, or secured by dredging, or the construction of jetties, etc. These artificial aids are usually very expensive as to the first cost, generally requiring heavy drains, both on the National Government and local communities, and where continuous dredging is required, the heavy maintenance which is necessitated for channels, slips and breakwaters, the annual charge against a port having a limited tonnage would become a burdensome or prohibitive tax or charge on all the tonnage handled from that port. A rival port having great natural advantages and free from artificial expense as to maintenance, delay to vessels, etc., would invariably win out as against handicaps above noted. To be of permanent value a harbor must have protection from storms and facilities for discharging or taking on cargo without loss of time. This feature is particularly important in the carrying of bulky and low priced cargoes which pay only a small rate per ton and which must in all cases be handled at a minimum of cost, and be in competition with similar products in various markets. For instance, a cargo steamer handling coal or low grade ore must not be subject to delays in waiting for subsidence of frequent storms or the heavy swells or for the ice to become broken up and carried out of the slips and terminals. It must be remembered that a harbor which would be largely a coal shipping port must be dependable, and actually available throughout the entire year. The greatest demand for coal is, of course, in the winter months when all but the most favorable harbors in Alaska are closed by ice, or subject to heavy storms and gales.

Before going into the details as to the comparative value of the routes to the interior, it may be well to consider the merits of the various alleged harbors which have been prominently brought to the public notice within the past few years. The harbors and routes

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Before going into the details as to the comparative value of the routes to the interior, it may be well to consider the merits of the various alleged harbors which have been prominently brought to the public notice within the past few years. The harbors and routes which have been brought to notice and are under consideration on the southeast coast of Alaska, beginning with the most easterly, are Controller Bay, Kavalla, Cordova, Valdez and Seward.

~~CONTROLLER BAY:~~ At the mouth of Bering River, which is the discharge channel for the great Bering Glacier, there has been formed an extensive area of shallow water and tide flats, fronting on the ocean for distance of about 15 miles and having an easterly and westerly distance of about the same length. Through a portion of this shallow bay the tidal flow from the ocean has maintained a channel or drain. From the heavy westerly and southwesterly storms the bay is partly protected by Kanak and Wingham Islands and on the south by Kayak Island and the long beach of Okalee Spit. Along the channel the line of five fathoms (or 30 ft) of water lies from two to three miles west of Kanak Island and with the exception of this comparatively narrow channel open to the west, between Kanak and Wingham Islands, the entire area of Controller Bay is much less than 30 ft in depth and in fact constitutes a large mud-flat and is unavailable for ocean going vessels of such tonnage as would be profitably engaged in carrying coal. The channel above mentioned extends easterly and southeasterly eight or nine miles and has a depth of 30 ft or more and affords two distinct sites for the construction of railway wharves and terminals. The first is at the southerly end of Kanak Island where the channel is at the last distance, or about 3000 ft from the shore. Some of the railway projects, organized for the purpose of reaching the Bering River coal fields contemplated the construction of wharfs and coal bunkers on this site.

The Alaska Coal & Development Co. (the English company) the Lippy-Davis Company, Cunningham's Company, the Copper River & Northwestern Railway Company, and others, have made surveys to this point. Kanak Island, being fairly level and composed of sandy deposit, affords a good layout for yards and storage tracks, but in order to reach the island a railway must be extended from mainland across the exposed Strawberry Channel, lying to the north of the Island, or over the four or five miles of ice floes of Controller Bay, if approached from the east. Probably a draw-bridge would be required in either of these approaches from mainland to the wharfs. This location is only partly protected from the southwesterly swells which prevail for a great portion of the year and which would greatly interfere with the coaling of ships at wharf or bunkers. Probably the greatest handicap and objection to Controller Bay as coal handling port is to be attributed to the fact that the bay is not in any way protected from the extremely strong gales from the east, southeast and northeast, which sweep across the flats from the Bering Glacier with a velocity of from fifty to 100 miles per hour. On account of the shallow nature of the Bay, and also due to inflow of fresh water from the glaciers, great ice masses form upon the flats and with the rising of each tide are swept into the channels and would undoubtedly offer some difficulties of unknown seriousness to the handling of vessels during the extremely cold periods in the winter. There is no possibility that Controller Bay would be monopolized or used exclusively by any one company. Two railroad systems could arrange to secure wharf or bunkers on the channel at the south end of Kanak Island.

The second terminal site, which is of several miles extent, would be on the northeasterly edge of the channel above described, which bends sharply to the southeast after passing Kanak Island. This channel lies three to four miles from the easterly shore of Controller Bay. A long and expensive approach across the shallow water of Controller Bay would be required to reach the deep water on which the bunkers and wharfs would be constructed. Two or more railroads could also use the frontage of this channel for the construc-

and westerly distance of about the same length. Through the narrow of this shallow bay the tidal flow from the ocean has maintained a channel or drain. From the heavy westerly and southwesterly storms the bay is partly protected by Kanak and Wingham Islands and on the south by Kayak Island and the long beach of Okalee Spit. Along the channel the line of five fathoms (or 30 ft) of water lies from two to three miles west of Kanak Island and with the exception of this comparatively narrow channel open to the west, between Kanak and Wingham Islands, the entire area of Controller Bay is much less than 30 ft in depth and in fact constitutes a large mud-flat and is unavailable for ocean going vessels of such tonnage as would be profitably engaged in carrying coal. The channel above mentioned extends easterly and southeasterly eight or nine miles and has a depth of 30 ft or more and affords two distinct sites for the construction of railway wharves and terminals. The first is at the southerly end of Kanak Island where the channel is at the last distance, or about 3000 ft from the shore. Some of the railway projects, organized for the purpose of reaching the Bering River coal fields contemplated the construction of wharfs and coal bunkers on this site.

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undoubtedly during the winter months be considerably interfered with by the conditions noted. Another effect of unknown seriousness presents itself on account of the enormous discharge of silt from the Bering Glacier. From investigations conducted during the past few years it is evident that the channels are being gradually filled and reduced in area.

The Richard Ryan Syndicate and Lippy-Davis people have been active in securing terminal lands on the east shore of the bay with the object of utilizing this channel for railway wharf and coal bunker purposes. Distance from Controller Bay to the Bering River coal fields is 22 to 30 miles. A railway line would be located largely on the partly overflowed marshes and along the edge of Bering River and would have light gradients and favorable to the traffic. The comparatively short distance to the coal fields, together with favorable grades, have doubtless been the main factors in the various attempts, covering a period of ten years, to utilize Controller Bay as a "coal shipping harbor". In the opinion of the writer, Controller Bay offers merely sufficient inducements for this purpose to be taken advantage of by several railway promoters who have not given full consideration to the necessity of having a harbor free from interruption and doubtful and experimental features. It could probably be utilized but slightly more than one half of the year as a shipping port, and, moreover, subject to delays caused by more or less frequent southeast gales, even in the summer season.

A coal shipping harbor must be dependable and economical in the winter months when the larger portion of the coal is consumed. Taking into consideration the various superior advantages of Cordova Harbor and the comparatively low cost of handling the traffic on a well built line having water level grades as against separate cost of construction, and maintenance of expensive terminals on Controller Bay with detached plant and organization, frequent interruptions from storms, etc., it is evident that the economic advantages, and the reliable plan for shipment of Bering River coal, is from the present terminus of the CR&NW Ry on Cordova Bay. Very important feature to be considered in this coal shipping question, for use of same in Alaska, is the cost as affected by handling or transfer charges. If coal is mined and shipped from Controller Bay to other points in Alaska by steamer it would not effect the consumer of coal in Alaska in saving, except that of the import duty on British Columbia coal. Any system which is planned for utilizing the Alaska coal to the Alaska consumer must provide for continuous rail route from the mine to the point of consumption.

If it should be required to ship only a few thousand tons per year of this Bering River coal, mined exclusively for export, and to be shipped in the summer season, then it might be advisable to build a separate railway from the mines to Controller Bay, but for tonnage running into hundreds of thousands or millions per year, this plan seems utterly inadvisable, and the most logical method is to convey the coal by all rail route to Cordova Harbor, where no interruption due to storms, tides or ice would take place, and where it could also be distributed to mining regions of Alaska at a minimum cost and at a point where the various ores and minerals of the whole Copper River region, and of Prince William Sound, could meet the coal and coke brought from Bering River fields.

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Katalla is the second point on the coast west of the 141st Meridian which has been exploited as a harbor and the possible terminal for railways. It lies a few miles west of Controller Bay and about 20 miles north of Cape St Elias and has an open roadstead exposed to

all winds except those from the north. It is partly protected from the northwest winds by the two Martin Islands. The Alaska Railway and Terminal Company planned for making an artificial harbor at Katalla on the northeasterly side of the Martin Islands by building a breakwater or heavy seawall from main land and extending from the islands northwesterly into the ocean. This company undertook the building of a railway from this proposed artificial harbor at Katalla, to the Christopher Group of coal claims on the east shore of Bering Lake. Several miles of grading was partly completed. The enterprise was, however, abandoned in the summer of 1907.

The Copper River & Northwestern Railway also attempted to utilize Katalla as a terminus for its road up the Copper River and as a shipping point for Bering River coal. Katalla had the important and desirable feature of presenting the opportunity of bringing both coal and copper to a common point on the ~~Alaskan~~ sea coast. Extensive preparations were made for the construction of a breakwater, wharf, bunkers and railway terminals but on account of the great expense for construction and maintenance of adequate breakwater the plan was discontinued at close of 1907.

As a seaport Katalla is practically exposed to the storms and strong gales which sweep from the southeast and northeast across Controller Bay from Bering Glacier. It is not, in fact, a harbor.

VALDEZ ROUTE: Valdez lies at the extreme northeast corner of Prince William Sound, the entrance of which is about 90 miles west of Controller Bay, between Hinchinbrook and Montague Islands. The town has a good harbor and is picturesque and interesting. The severe winds which sweep down the canyon from Valdez Glacier are often the source of inconvenience and difficulty to the shipping when making landing or departing from the wharf. The town is built upon an extensive gravel deposit, washed down from Valdez Glacier, at the lower end of a narrow and picturesque valley. It has been an outfitting point for the prospectors going into the Tanana and Yukon valleys. It was the terminus of the Government trail and wagon road into the Tanana country, and headquarters Government cable service and Alaska Road Commission. Since the completion of the Copper River & Northwestern Railway from Cordova to Chitina, the mail and passengers, as well as freight, destined to the Tanana Country, have been diverted to Cordova and the Copper River Route. For several years this town was a prospective ocean terminus for several railway enterprises. As a railway terminus, however, the drawbacks are serious. The high coast range approaches close to the shore, necessitating steep gradients for any railway reaching the summit. Sharp curvature would be required through the canon. The locality is also subject to an extremely heavy snow fall. A railway route projected from Valdez to Tanana Valley, or Matanuska coal districts, if laid out along the most direct route by way of Thompson's Pass, Ernestain and the Tonsina, and Copper Center, would be required to pass over two distinct summits having a height of 1800 and 2800 feet above sea level, separated by depression of some 700 feet. These conditions indicate heavy cost of construction and extremely high cost of operation, which would make any competition with the Copper River Route entirely out of the question. This Valdez-Thompson's Pass Route has, I believe, been recently recommended to Congress by Mr. Hubbard of Valdez, as the best route for transpor-

all winds except those from the north. It is partly protected from the northwest winds by the two Martin Islands. The Alaska Railway and Terminal Company planned for making an artificial harbor at Katalla on the northeasterly side of the Martin Islands by building a breakwater or heavy seawall from main land and extending from the islands northwesterly into the ocean. This company undertook the building of a railway from this proposed artificial harbor at Katalla, to the Christopher Group of coal claims on the east shore of Bering Lake. Several miles of grading was partly completed. The enterprise was, however, abandoned in the summer of 1907.

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Valdez is distinctly separated, however, from both the Bering River district and the Matanuska coal fields by the rugged mountain ranges, the deeply indented shore line and general topographic conditions which preclude such an arrangement on anything like economical lines. To reach the Matanuska fields, unless a portion of the Copper River & Northwestern Railway Route should be used, three summits would have to be crossed, with deep valleys lying between. Consequently the transportation of coal, as in competition with either the Copper River Route or the Susitna Valley Route would be prohibitive. If the Valdez Route should be projected exclusively as a railway route to the interior of Alaska, having eliminated the coal question, the route is also found to be impracticable, as compared with the other routes mentioned. There are two possible routes from Valdez to the Tanana. The route as originally planned crosses Thompson's Pass and Ernestine and descends the Tonsina River nearly to Copper Center. It would then strike the same route as has been projected by the CR&NW Ry extension between Chitina and Fairbanks. The second or alternative route is also through Keystone Canon and swings to the easterly over Marshall Pass down the Tasnuna River and along the CR&NW Ry through Woods Canon to Chitina, and thence to Copper Center and the Tanana Valley. To build this new and expensive railway over these high passes and through the very expensive Copper River canons is obviously impracticable.

SEWARD AND SUSITNA ROUTE: Seward is located near the southeast corner of Kenai peninsula at the upper end of Resurrection Bay, about 100 miles west of entrance to Prince William Sound and was selected as ocean terminus of Alaska Central Railway (Now Alaska Northern Railway)

From Seward the Alaska Northern Railway extends for 71 miles to the head of Turnagain Arm, and has been surveyed up the Susitna Valley and over the broad pass and down the Cantwell to the Tanana River and Fairbanks. A branch line has been surveyed from mile 146 up the Matanuska valley to the coal fields. For our purpose in this article it is designated as the "Susitna Route", being one of the two river routes first mentioned. The Susitna Valley is the most westerly of the two river valleys which afford openings through the coast range. As a town Seward is very pleasantly situated and offers special attractions. Resurrection Bay is one of the finest harbors on the south coast of Alaska. It is easy of access, of large area and is sheltered from all winds except those from the north. The water is, however, too deep to permit of anchoring of vessels, but this difficulty could be largely overcome by the planting of heavy anchorage buoys. Interested parties as well as other disinterested Government officials have recently proposed to have this Seward-Susitna Railway enterprise taken up by the National Government and to extend the road from Seward across Alaska to Fairbanks and to extend the line from Susitna River at Mile 146 westerly to the coal fields in the upper Matanuska regions. The line from Seward to Fairbanks would be 160 miles or more in length, or 20 miles longer than would be the Copper River Route from Cordova to Fairbanks. The Alaska Northern Railway formerly the Alaska Central has laid its track from the water front at Seward on Resurrection Bay for a distance of 71 miles to a point on Turnagain Arm (a branch of Cook's Inlet).

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As well as rebuilding a portion of the line from will be required in order to fit for heavy coal traffic. The present track as laid is not of great value. In the first 54 miles from Seward to summits are crossed. The first occurs on mile 12 and presents a northbound rise grade of 2.5%, the summit is about 700 ft. above sea level. The line then descends into the valley of the Kenia Lake and Trail Lakes. On Mile 39 the ascent of the 2nd divide begins. Gradients of 2.2 percent are encountered in making both the ascent and descent of this divide, the summit of which is about 45 miles from Seward and has an elevation of 1052 ft. This portion of the line between Trail Lakes and Potter River Valley is not adapted for heavy traffic and would of necessity be relocated and a new route provided in order to reduce the heavy gradients and sharp curves. It is probable that 18 or 20 miles of new line involving some heavy construction would be required to reduce the present unfavorable situation which applies in passing over this summit. At mile 54 the line enters Placer River Valley and presents comparatively light work and nearly level grade. At mile 69 the line passes the head of Turnagain Arm and turns westerly along the steep rocky shore of this Arm at Cook's Inlet. Over 1250 ft. of descent has been made and the track is again down to sea level. The track laying was discontinued at mile 71 or 72. beyond the end of the track the line still continues along the precipitous shore of Turnagain Arm to Mile 102. This portion of the line for over 30 miles involves very heavy construction and is comparable to that which was encountered in Wood Canon on the Copper River Route. This Turnagain Arm section will also require a great amount of heavy snow shed construction. The adjacent mountains to the north reach a considerable elevation and in winter and spring are very deeply covered with snow. Indications as far as observed, and reports from reliable sources show that without an extremely heavy and long snow sheds this portion of the line could not be operated during the winter and spring months without very great expense and danger. On this route they are over 30 miles of snow shed country as against three miles on the Copper River Route. There are also several stretches of adverse 1% gradients. From mile 102 to 134 the line is along the southeasterly shore of Knik Arm. The construction here will be comparatively light although several pieces of 1% against outbound traffic are also encountered. Between the proposed Matanuska coal branch ~~junction~~ junction on mile 146, near the mouth of the Matanuska River and the terminus at Seward and Resurrection Bay there is a total of adverse rises occurring against outbound traffic of 1940 ft. A portion of this height would of course be overcome by train velocity and would not effect the train loads, but the greater portion must be overcome by the engine power of each train passing over the road. From the junction point near the mouth of the Matanuska River, 146 miles from Seward and at practically tide level a branch line is proposed extending northeasterly to the Matanuska Coal Fields. Generally speaking the construction in the Matanuska Valley would not be heavy expect for three or four miles in a canon where heavy rock work is encountered. These few miles will probably cost for grading \$70,000.00 per mile. In the vicinity of this canon and adverse grade of .5% percent is also encountered for a distance of 3 to 5 miles. Aside from this interruption the gradients are generally favorable to the outgoing coal traffic between the coal fields and the junction point of the Matanuska Branch.

The first coal occurs on Kings River about 2 miles distant from MP 176 from Seward. Chikaloon Camp at mile 184 from Seward would probably be the principal shipping point for bituminous coal. It is shown as being the terminus of the Alaska Northern Railway Company's coal branch line; but in order to reach the anthracite region which lies to the northeasterly, it is understood that an extension of 16 miles would be required, making total distance of 200 miles from Seward. This last point, which we may designate as "Anthracite" is coincident with a point on the survey of the Copper River & Northwestern Railway 155 miles from Chitina, to which latter point the Copper River & N W Ry is constructed and in successful operation. The elevation of Chikaloon is about 1000 ft above sea level and that of the suggested terminus at Anthracite is about 1700 ft.

FEATURES OF ALASKA NORTHERN RAILWAY AS APPLICABLE TO COAL TRAFFIC. The series of adverse gradients which extend for a distance of 140 miles, while not seriously affecting a light traffic, will exert a great and ~~adverse~~ detrimental influence on heavy coal tonnage, greatly reducing the train loads, which could be handled as compared with the Copper River line. This condition will necessitate the multiplicity of trains in handling a given tonnage or the use of extra engines which must make long runs on account of the widely scattered and numerous "adverses" to be encountered.

Between the coal mines and junction point mile 146 the ruling grade as above noted is .5%; to mile 54 in Placer River Valley ruling grade is 1% with considerable sharp curvature. From mile 54 southward occurs the third distinct operating section having at present (it may be somewhat modified by building a longer line) adverse grades of 2.2% on very sharp curves, maximum being 14 degrees; elevation to be overcome is 1340 ft.

It is well even at this time to compare this method of handling coal over these adverse grades and distances of 184 to 200 miles to tide water as against delivering coal from the Bering River fields, a distance of 93 1/2 miles to Cordova. This road from the Bering River District is practically level and can be constructed so as to provide grade line not exceeding .5%. If the expense of the traffic should be estimated merely upon a distance basis, the cost would be about double the rate between Matanuska and Seward as from Bering River fields to Cordova, while the actual expense per ton on account of the series of adverse grades and elevations to be overcome would bring the total charges against each ton to practically three times the total expense between Bering River and Cordova. The people and industries of Alaska most earnestly demand a coal supply furnished them at a minimum of cost; otherwise foreign coal or oil would continue to be used in order to develop local metal mining of Alaska. It is most important that coal and coke should be delivered at a comparatively low rate. The shipping of coal from Matanuska to Seward would not meet the situation as to most advantageously supplying the immediate and prospective demand for coal in Alaska. For instance, in order to supply the great copper mining region of the Chitina and upper Copper River, would be necessary to bring this coal 184 to 200 miles over the adverse grades above noted to tide water at Seward, then transfer it to ships and by them delivered to Cordova, then taken up the CR&NW Ry for a distance of 150 miles or more to the Chitina and Copper River mines.

Post Office Department

SECOND ASSISTANT POSTMASTER GENERAL

Washington

34
copy sent to Sorby 10/15/12
[Signature]

October 2, 1912.
GOVERNOR'S OFFICE
RECEIVED
OCT 11 1912
ANSWERED
[Signature]

Hon. Walter E. Clark,
Governor of Alaska,
Juneau, Alaska.

Sir:

With reference to your letter of June 12, 1912, transmitting a petition signed by Mr. N. Sorby and others of Dillingham, Alaska, for the establishment of mail service during the winter months on a route from Quinhagak by Good News Bay (n.o.), Togiak (n.o.), Kolukuk (n.o.), Kanakanak (n.o.), Chogiung (n.o.), Wood River (n.o.) and Dillingham to Nushagak, I have to inform you that a representative of this Office has made an investigation of the conditions affecting the case and the matter has been given careful consideration. Were the post offices at Nushagak and Dillingham supplied from Quinhagak during the winter months, it would be necessary to transport the mails for those offices over land from Cordova by Fairbanks, Tanana, Kaltag, Koserefsky, Bethel and Quinhagak, a course over which it would require about sixty days to transport the mails, and in addition to the time of transit it is thought advisable not to increase the weight of mails carried over the interior routes where the additional mails can be delivered by other routes.

In view of the facts in the case, monthly service