

July 1, 1953

MI-085-02

ITINERARY REPORT

TO: PHIL R. HOLDSWORTH

FROM: M. W. JASPER, ASSOCIATE MINING ENGINEER

SUBJECT: Reconnaissance dip-needle survey along Glen Allen Highway on June 20th and 21st, 1953, between Eklutna Indian Village and the Knik River bridge.

With poor to nil radio reception reported along this east-west highway section by motorists and others for many years, this requested preliminary dip-needle survey has been undertaken with objective of determining whether magnetic ore-bodies were present within the area, in which case they could be the cause of this phenomena.

In this event it is believed that such ore-bodies would have to be of considerable magnitude and areal extent to affect radio reception along this 11 to 12 mile section of the highway, and their location would be of real possible economic importance.

There are two other (possible) alternative explanations for the "blanking-out" of radio reception in this area:-

1. The high ridges of the Chugach Mountains (elevations ranging up to 6000 feet) act as an effective barrier, deflecting the radio waves from the Anchorage radio stations to the southwest; the highway along this east-west section is located at base of the very northern slopes. (Poor reception under similar conditions has been noted elsewhere).
2. This may be a "dead" or "blank" area for radio reception, such as have been reported existing in other regions, the reasons for which are not thoroughly understood.

The chromite deposits in this section and along the highway are not presently considered to have any effect upon radio reception; geophysical surveys to be conducted on chromite areas of the Kenai peninsula this season will give valuable information on this point. A motorist stopping for few minutes at Mile 33 on June 21st stated his observation has been that the poorest radio conditions exist in section from new Eklutna Power project east to Knik river bridge; this section of road is at base of the steepest and highest mountain ridges. Radio reception with good equipment remains to be logged.

June 20th: M. W. Jasper left Anchorage at 8 A. M. in personal car.

Dip needle readings were started at point approximately 300 feet east of road turning off highway to serve the Eklutna Indian Village. From this starting point readings were at 100 foot (paced) intervals, along the gravel surface road serving the old (present) Eklutna power plant, for a total distance 2600 feet. Copy of recorded readings are attached; they were

taken in the East-West vertical plane. Their somewhat erratic nature may be due to "sluggishness" of the needle, due possibly to inexperience of the operator and failure at times to hold the instrument in the vertical plane, although several anomalies may actually account for the sharp inclination variations. Results suggest this traverse section should be rechecked and any anomalies found detailed.

From east end of above traversed section - which is approximately due south of railway and paved highway crossing - return was made to the highway, and no readings were taken from the railway crossing for next 0.3 mile to side-road leading to the C. A. A. radio station north of highway.

From this latter point readings were resumed throughout the afternoon for the next 3.1 miles easterly at 0.1 mile intervals along the highway. For this section inclination readings of the dip needle were taken on both north and south sides of the highway in the east-west and north-south planes as a check on possible influence of telephone lines along south side and power lines along north side of right-of-way, with note also made of estimated distances to railway tracks from time to time. It did not appear that phone, power lines, or railway had any marked effect upon the dip needle.

The recorded readings (attached) for this 3.1 mile section suggest several anomalies, although it is obvious the reconnaissance interval of 0.1 mile does not permit a clear interpretation.

The night was spent at the Matanuska Hotel, in Palmer, reaching that town about 6:30 PM.

June 21st: Left Palmer at 8 AM and resumed the survey about 9 AM, continuing the work until 5:30 PM that afternoon, returning to Anchorage about 9 PM.

Readings were again taken at 0.1 mile intervals for the next 5.0 miles easterly along the highway; the exceptions being at Mile Post 33 (the only one noted along traversed sections) at one hundred foot intervals for 400 feet to check possible influence of 2 corrugated iron culverts 6 to 8 feet below highway surface, and again 0.4 mile east of latter point where readings were taken at 100 foot intervals for 600 feet to check possible influence of the steel storage yards of the new Eklutna hydro-electric power plant. In vicinity of corrugated iron culverts (few feet apart) an anomaly occurs which may be due to the pipe; the steel storage yard on south side of and feet above road showed minor influence on the dip needle.

Readings for the day were again taken in both the East-West and North-South vertical ~~section~~ planes and some sections were read on both sides of the highway, the latter checking closely.

The recordings for this 5.0 Mile section also show some "suggested" anomalies, although "sluggishness" of dip needle movement at times may account for the steepest inclinations.

Transcript of inclination recordings and observations at at the stations read are attached for interpretation and suggestions of ex-

perienced members of the Department.

A study of the survey notes suggests several anomalies should be rechecked, and if same results obtained a detailed survey of the most promising areas should be made.

Remaining distance along the highway to the Knik River bridge to be surveyed is 2.3 miles.

The reconnaissance survey has covered 8.6 miles to date.

Respectfully submitted



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M. W. Jasper  
Associate Mining Engineer

Appended:  
Transcript of dip needle readings

July 6, 1953

ITINERARY REPORT

TO: Phil R. Holdsworth, Commissioner of Mines  
FROM: M. W. Jasper, Associate Mining Engineer  
SUBJECT: Continuation of dip-needle reconnaissance survey along Glen Highway July 6th, 1953, between Eklutna Indian Village and the Knik River Bridge.

With interviews at Anchorage office with mining property owners delaying departure for the Moose Creek copper investigation until noon, the interval from 1 P. M. until 6:30 P. M. was spent in extending the reconnaissance dip needle survey a distance of 1.5 miles along the highway. There remains 0.8 miles distance to complete this preliminary survey project to the Knik River bridge. The night was spent at Palmer, arriving there at 7 P. M.

Dip needle readings were taken at 0.05 mile intervals with following exception:-

With an anomaly indicated at 1.35 miles west of Knik River bridge, readings were taken at 25, 50, 75, 125, 175, and 225 feet east of this point, and again at 25, 50, 75, and 100 feet intervals west of this point.

"Suggested" anomalies occur at a number of other points in the 1.5 miles of the traverse.

Throughout this distance (1.5 miles) readings were taken on both sides of the highway; they show variations of 2 to 23 degrees in the East-West plane and 0 to 5 degrees in the North-South vertical planes.

Interpretations of the reconnaissance survey recordings will not be attempted until more detailed work can be completed. Dip needle variations at number of points suggest presence of mineralization in appreciable amounts.

Notation was made of distances from both the telephone and power line installations, in case one or both of these might have an effect upon the compass.

Transcript of the dip needle survey notes will be forwarded on completion and are to be attached to this report.

Respectfully submitted,



M. W. Jasper  
Associate Mining Engineer

Anchorage, Alaska  
July 11, 1953

EKLUTNA TO KNIK RIVER BRIDGE HIGHWAY RECONNAISSANCE

DIP NEEDLE SURVEY

Field Notes

June 20, 1953

Odometer Readings	Dip Needle Inclination (read S. end)		Remarks
	E-W Plane	S-N Plane	
09126.75	168°		S. side graveled road to original Eklutna power plant & staff residences. 1st read. 300' E. of Eklutna Indian Village road turn-off.
"	↓ 100' 168		Ditto above
"	↓ 200 168		" "
"	↓ 300 164		" "
"	↓ 400 8		" "
"	↓ 500 4		" "
"	↓ 600 74		" "
"	↓ 700 152		" "
"	↓ 800 96		" "
"	↓ 900 79		" "
"	↓ 1000 90		" "
"	↓ 1100 160		" " at intersection Eklutna Lake road
"	↓ 1200 161		" "
"	↓ 1300 85	0°	" "
"	↓ 1400 91	178	" "
"	↓ 1500 124	178	" "
"	↓ 1600 166	178	" "
"	↓ 1700 104	178	" "
"	↓ 1800 168	177	" "
"	↓ 1900 154	177	" "
"	↓ 2000 76	178	" "
"	↓ 2100 86	176	" "
"	↓ 2200 109	175	" "
"	↓ 2300 166	177	" "
"	↓ 2400 166	176	" "
"	↓ 2500 116	177	" "
"	↓ 2600 162 178	178	" " at 1st residence (gray stucco) in old Eklutna power plant area. From last reading return to highway at 1st railway x-ing of hiway, the latter about due north of above power plant area. From railway x-ing east to CAA radio station turnoff - distance 0.3 Mi. no readings taken.
09127.9	170°	178°	At entrance to CAA radio station driveway
28.0	125	178	S. side highway. Phone line 50' S.
28.1	110	179	Ditto above " " 50' S/
28.2	110	177	Ditto last reading. Over small stream steel culvert
28.3	93	176	" " " .
28.4	90	177	" " " .
28.5	81	178	" " " .
28.6	102	178	" " " .
28.7	140	178	" " " .
28.8	97	178	" " " .
28.9	110	176	" " " .
29.0	104	176	" " " .

EKLUTNA TO KNIK RIVER BRIDGE HIGHWAY RECONNAISSANCE

DIP NEEDLE SURVEY

Field Notes

June 20, 1953

(Continued)

Odometer Readings	Dip Needle Inclination (read S. end)		Remarks
	E-W Plane	S-N Plane	
09129.1	120°	176°	S. side hiway. Phone line 50' S., power line 50' N of road.
29.2	156	176	Ditto above. Railway track est. 300' S.
29.3	120	176	" " " " " "
29.4	110	177	" " " " " "
29.5	170	177	" " " " " "
29.6	177	178	" " " " " "
29.7	169	177	" " " " " "
29.8	130	178	" " " " " "
29.9	107	178	Ditto above. Various readings - 107°, 150°, 160°- on S & N side hiway. Tracks 75' S.
<del>29.9</del>	<del>110</del>		
30.0	140	178	S. side of hiway. Tracks 75' S.
30.0	162°	178°	N. " " " . Phone-power lines same dist.
30.1	130	178	S. " " " . Track 125' S.
30.1	<del>155</del>	<del>178</del>	N. " " " . Phone-power lines same dist.
30.2	162	178	S. " " " . Track 300' S.
30.2	165	178	N. " " " . Phone-power lines same dist.
30.3	165	178	S. " " " . Track 400' S.
30.3	165	178	N. " " " . Phone-power lines same dist.
30.4	168	178	S. " " " . Track 450' S. Radio weak-clear.
30.4	168	178	N. " " " . Phone-power lines same dist.
30.5	170	178	S. " " " . Track 450' S. Radio weak-clear.
30.5	165	178	N. " " " . Phone-power lines same dist.
30.6	165	178	S. " " " . Track 500' S. Radio weak-clear.
30.6	165	178	N. " " " . Phone-power lines same dist.
30.7	107	178	S. " " " . Track 500' S. Radio weak-clear.
30.7	127	178	N. " " " . Phone line same dist.
			Rock out N. side of road
30.8	166	178	S. " " " . Track 250' S. Radio nil.
30.8	157	178	N. " " " . Phone line 40' S.
30.9	105	178	S. " " " . RR x-ing 200' W. of reading.
30.9	137	178	S. " " " . 2nd reading. Radio fair-clear.
31.0	105	178	S. " " " . Track 400' N. Phone line 75' N.
31.00	112	178	S. " " " . 2nd reading. Radio weak-clear.
31.1	117	178	S. " " " . Track 600' N. Phone 75' N. Radio weak-poor.
31.2	115	178	S. " " " . " " " . Spring S. side.
31.3	123		S. " " " . " " " . Spring S. side.
31.4	167		S. " " " .
31.4	137		N. " " " . Phone line 45' N. of road.
31.5	160		S. " " " . (Moose x-sd road 300' E.)
31.5	172		N. " " " . Phone line 45' N. below road.
31.6	178		S. " " " .
31.6	182		N. " " " . " " 30' N. @ road level.

EKLUTNA TO KNIK RIVER BRIDGE HIGHWAY RECONNAISSANCE

DIP NEEDLE SURVEY

Field Notes

June 20, 1953

(Continued)

Odometer Readings	Dip Needle Inclination (read S. end)		Remarks
	E-W Plane	S-N Plane	
09131.8	127°		S. side of hiway. Glacial drift in rt bank
31.7	157°		N. " " " Phone line 40 N. below road
31.8	120	170°	S. side. Schistose serpentized Bdrk bank 10' rt
31.8	120	<del>170</del> 172°	N. " Phone line 35' N & 5' below road
31.9	130	175	S. " Same bdrk in S bank 25' S of road
31.9	130	174	N. " Phone line 25' N & 10' above road
32.0	165	177	S. " Same bdrk cropping 10' S of road
32.0	165	177	N. " Phone line 35' N & 10' above. V. poor radio

Work suspended for day at this point, 7.4 mi. from Knik river bridge.

June 21, 1953 Survey resumed 0.1 Mi. east of last above readings.

09183.6	175°	175°	S. side. Schistose, slitley serpentized, dark bedded bdrk exposed by read grade in S. bank
83.7	100&170?	178	S. side. Ditto above
83.7	170°	178°	N. " Phone line 25' N & 8' above road
83.8	165	178	S. " Bdrk similar to last station reading
83.8	170	178	N. " Phone line 25' N & 15' above road
83.9	105	178	S. " Bdrk in S bank similar to last reading
83.9	165	178	N. " Phone line 30' N & 12' above road
84.0	173	178	S. " 30' rock cut S side. Bdrk similar
84.1	126	176	S. " 15' " " " " " "
84.1	122	175	N. " Phone line 30' N & 7' above road
84.2	170	175	S. " Bdrk "drift" covered.
84.2	177	176	N. " Phone line 40' N & 8' above road
84.3	<del>128</del> 128	<del>177</del> 177	N. " " " 30' N @ road level
84.3	118	176	S. " Bdrk same as noted above
84.4	170	175	S. " Bdrk " " " @ 09183.6
84.4	168	175	N. " Phone line 35' N & 5' above road
84.5	<del>170</del> 170	<del>176</del> 176	N. " " " 25' N & 12' " "
84.5	173	175	S. " Bdrk "drift" covered. Radio very poor
84.6	185	177	S. " " " " " " " "
84.6	<del>170</del> 170	178	N. " Phone line 35' N & 10' above road
84.7	175	176	S. " Bdrk "drift" covered. Radio very poor
84.7	170	176	N. " Phone line 25' N & 15' above road
84.8	172	177	S. " "Drift" covered gentle plus slope for est. 700' to south
84.8	170	176	N. " Phone line 30' N & 6' above road. Knik river slough 150' N & -80'
84.9	176	177	S. " Ditto last station
84.9	172	178	N. " Phone line 20' N & 15' above road
85.0	177	177	S. " New power project staff residences (W. end) 200' S and 30' above road
85.0	172	178	N. " Phone line 30' N & 10' above road
85.1	170	177	S. " 150' S & 25' above road to 16th power project residence. Access road 200'E
85.1	175	177	N. " Phone line 40' N & 15' above road
85.2	174	177	S. " Bdrk drift covered. Beyond project houses
85.2			33 Mi. post. Steel culvert 25' W.

EKLUTNA TO KNIK RIVER BRIDGE HIGHWAY RECONNAISSANCE  
DIP NEEDLE SURVEY

Field Notes  
(Continued)

June 21, 1953

Odometer Readings	Dip Needle Inclination (read S. end)			Remarks
	E-W Plane	S&N Plane		
09185.3	115°	175°	S.	side. Bdrk "drift" covered. Culvert 25' W.
85.3 ± 100'	120	178	S.	" " " " " " 125' W.
85.3 ± 200'	171	178	S.	" " Steep Mt. slope
85.3 ± 300'	170	175	S.	" " " " "
85.4	172	178	S.	" " " " "
85.4 ± 250'	185	180	S.	" " " " " Above 2 steel culverts
85.4 ± 200'	158	175	S.	" " " " " Steel 50' E.
85.4 ± 280'	172	176	S.	" " " " " Culverts 30' W.
85.5	165	177	S.	" " " " " 400' S. 16 Trailers parked on N side of road.
85.6	171	175	S.	" " Steep slope 150' S. No bdrk exposed
85.7	168	175	S.	" " Steep Mt. slope. Pile steel 25' SE. and hydraulic pipe 30' S.
85.7 ±	<del>166</del> 156°	175°	N.	" " Phone line 30' N & 15' above road
85.7 ± 100	<del>168</del> 168	<del>176</del> 176	N.	" " Opposite pile of steel hoppers, forms, reinforcing rods, "H" beams storage area
85.7 ± 100	164	175	S.	" " 25' S to steel equipment storage area
85.7 ± 200	164	170	S.	" " 5' S to steel pile
85.7 ± 200	173	176	N.	" " Opposite last reading
85.7 ± 300	180	177	N.	" " Phone line 30' N & 20' above road. Power line x-ss road 40' above
85.7 ± 300	172	174	S.	" " Pile reinforcing rods 50' S.
85.7 ± 400	172	176	S.	" " Steel shop 75' S.
85.7 ± 500	173	177	S.	" " Sand-gravel storage piles 100' S. West end of office 125 ft N.
85.9	171	178	S.	" " No steel closer than 150' S. Steep Mt. slope 500-600' S.
86.0	170	177	N.	" " 150' to project diesel power plant Base steep Mt. slope below Eklutna upper penstock tunnel 300' SE
86.1	174	176	S.	" " 200' S to new penstock discharge at foot steep Mt. slope
86.2	175	177	S.	" " 200' S to foot steep Mt. slope
86.3	165	177	S.	" " Junction with old paved road torn out for power plant. Base Mt. slope 75'S
86.4	165	175	S.	" " Cat & 2 cranes 30 & 50'. Steep Mt slopes "drift" covered
86.5	168	176	S.	" " Dense growth on steep slopes to S.
86.6	173	175	S.	" " Base steep slope 10' S dense growth
86.7	170	176	S.	" " Ditto last station
86.8	175	175	S.	" " 100' S base steep slope, dense growth
86.9	172	177	S.	" " 50' S " " " " " "
87.0	165	175	S.	" " 200' S " " " " , few outcrops
87.1	166	173	S.	" " 250' S " " " " . No o.c.'s visible
87.2	173	174	S.	" " 400' S ditto last station
87.3	112	178	S.	" " 500' SE base steep slope. 2 wires crossing road 20' above



EKLUTNA TO KNIK RIVER BRIDGE HIGHWAY RECONNAISSANCE  
DIP NEEDLE SURVEY

Field Notes  
(Continued)

June 21, 1953

Odometer Readings	Dip Needle Inclination (read S. End)		Remarks
	E-W Plane	S-N Plane	
09187.4	165°	176°	S. side. Mt. slope base 300' S. Gray shake bungalow 150' NW of road
87.5	102	175	S. " . Base steep Mt. slope 300' S
87.6	121	175	S. " . Ditto above. Bdrk not visible from road
87.7	127	175	S. <sup>side</sup> Opposite Demings rdhse. Gulch southerly for several miles. Radio clear but weak
87.8	164	175	S. side. On "fan" from gulch to S.
87.9	94	177	S. " . On "fan" from gulch to S. Gas sta. 100' W.
88.0	165	176	S. " . " " " " " S. Steep Mt. slope 400' to S.
88.1	168	176	S. " . On "fan" from gulch to S. Goat creek lumber yard 50' S.
88.2	168	176	S. " . Goat creek bridge 180' E. Bdrk in bluff on S side of creek
88.3	172	175	S. " . Goat creek bridge 150' W. Base Mt 150' S.
88.4	113	176	S. " . Base Mt. slope 400' S.
88.5	176	174	S. " . Base of rock slide area 400-500' SE.
88.6	172	177	S. " . " " " " " 300-400' S.
88.6			Last reading taken 50' N of phone pole #10001.

Work suspended for day 2.3 miles from Knik river bridge.

Note:-

occasionally

Radio reception comments were made from use of portable Zenith radio without "grounding" or aid of outside arial. Reception volume was weak, and while sometimes fairly clear it was generally noisy. Reception should be logged for section with a good radio and arial car installation.

being

Above dip needle results are forwarded for study and critical comment before the reconnaissance survey is completed and before "detailing" or checking any suggested magnetic mineralized areas.

Respectfully submitted,



M. W. Jasper

Associate Mining Engineer  
Territorial Dept. of Mines

July 4, 1953  
Anchorage, Alaska

ITINERARY REPORT - July 1, 1953

TO: Phil R. Holdsworth

FROM: M. W. Jasper, Associate Mining Engineer

SUBJECT: Reconnaissance dip-needle survey along Glen Allen Highway on June 20th and 21st, 1953, between Eklutna Indian Village and the Knik River Bridge.

With poor to nil radio reception reported along this east-west highway section by motorists and others for many years, this requested preliminary dip-needle survey has been undertaken with objective of determining whether magnetic ore-bodies were present within the area, in which case they could be the cause of this phenomena.

In this event it is believed that such ore-bodies would have to be of considerable magnitude and areal extent to affect radio reception along this 11 to 12 mile section of the highway, and their location would be of real possible economic importance.

There are two other (possible) alternative explanations for the "Blanking-out" of radio reception in this area:

1. The high ridges of the Chugach Mountains (elevations ranging up to 6000 feet) act as an effective barrier, deflecting the radio waves from the Anchorage radio stations to the southwest; the highway along this east-west section is located at base of the very steep northern slopes. (Poor reception under similar conditions has been noted elsewhere).
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June 20th -- M. W. Jasper left Anchorage at 8 A. M. in personal car.

Dip needle readings were started at point approximately 300 feet east of road turning off highway to serve the Eklutna Indian Village. From this starting point readings were at 100 foot (paced) intervals, along the gravel surface road serving the old (present) Eklutna power plant, for a total distance of 2600 feet. Copy of recorded readings are attached; they were taken in the east-west vertical plane. Their somewhat erratic nature may be due to "sluggishness" of the needle, due possibly to inexperience of the operator and failure at times to hold the instrument in the vertical plane, although several anomalies may actually account for the sharp inclination variations. Results suggest this traverse section should be rechecked and any anomalies found detailed.

From east end of above traversed section - which is approximately due south of railway and paved highway crossing - return was made to the highway, and no readings were taken from the railway crossing for next 0.3 mile to side-road leading to the C. A. A. radio station north of highway.

From this latter point readings were resumed throughout the afternoon for the next 3.1 miles easterly at 0.1 mile intervals along the highway. For this section inclination readings of the dip needle were taken on both north and south sides of the highway in the east-west and north-south planes as a check on possible influence of telephone lines along south side and power lines along north side of right-of-way, with note also made of estimated distances to railway tracks from time to time. It did not appear that phone, power lines, or railway had any marked effect upon the dip needle.

The recorded readings (attached) for this 3.1 mile section suggest several anomalies, although it is obvious the reconnaissance interval of 0.1 mile does not permit a clear interpretation.

The night was spent at the Matanuska Hotel, in Palmer, reaching that town about 6:30 P.M.

June 21st: -- Left Palmer at 8 A.M. and resumed the survey about 9 A.M., continuing the work until 5:30 P.M. that afternoon, returning to Anchorage about 9 P.M.

Readings were again taken at 0.1 mile intervals for the next 5.0 miles easterly along the highway; the exceptions being at Mile Post 33 (the only one noted along traversed sections) at one hundred foot intervals for 400 feet to check possible influence of 2 corrugated iron culverts 6 to 8 feet below highway surface, and again 0.4 mile east of latter point where readings were taken at 100 foot intervals for 600 feet to check possible influence of the steel storage yards of the new Eklutna hydro-electric power plant. In vicinity of corrugated iron culverts (few feet apart) an anomaly occurs which may be due to the pipe; the steel storage yard on south side of and few feet above road showed minor influence on the dip needle.

Readings for the day were again taken in both the east-west and north-south vertical planes and some sections were read on both sides of the highway, the latter checking closely.

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Transcript of inclination recordings and observations at the stations read are attached for interpretation and suggestions of experienced members of the Department.

A study of the survey notes suggests several anomalies should be rechecked, and if same results obtained a detailed survey of the most promising areas should be made.

Remaining distance along the highway to the Knik River bridge to be surveyed is 2.3 miles.

The reconnaissance survey has covered 8.6 miles to date.

Respectfully submitted

M. W. Jasper  
Associate Mining Engineer

Appended:

Transcript of dip needle readings

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TO: Phil R. Holdsworth, Commissioner of Mines

FROM: M. W. Jasper Associate Mining Engineer

SUBJECT: Continuation of dip-needle reconnaissance survey along Glen Highway July 6, 1953, between Eklutna Indian Village and the Knik River Bridge

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Notation was made of distances from both the telephone and power line installations, in case one or both of these might have an effect upon the compass.

Transcript of the dip needle survey notes will be forwarded on completion and are to be attached to this report.

Respectfully submitted  
M. W. Jasper  
Associate Mining Engineer

Anchorage, Alaska

July 11, 1953