

411

Anchorage, Alaska  
April 23, 1949

Mr. J. P. Morris  
Assistant to Vice President  
The Atchison, Topeka and Santa Fe Railway System  
80 East Jackson Boulevard  
Chicago 4, Illinois

Dear Mr. Morris:

Reference is made to my inquiry some time ago regarding The Alaska Railroad's interest in the purchase of some of your 3160 Class Locomotives.

For your information, I am attaching a letter from my Chief Engineer, advising that the weight of these locomotives are prohibitive on our present bridges, however The Alaska Railroad will still be interested in this type locomotive if Congress decides to provide funds for the rehabilitation of the Seward-Portage section of The Alaska Railroad, which is in the mountainous division, and this is the severest section of the line insofar as operating conditions are concerned.

The question of rehabilitating this section of the Railroad is under study by the Department of Defense and by the Department of the Interior, and if the decision is made to rehabilitate this particular section, we will construct bridges of the E-60 rating. We would then require a heavy type mountain engine like the Santa Fe Mikado type engines, Class 3160, which, I feel, would be an ideal engine for this section of the Railroad.

Yours very truly,

cc: Mr. G. A. Benedict

(SIGNED) J. P. JOHNSON

JPS:twgr

J. P. Johnson  
General Manager

Attachment

Anchorage, Alaska  
April 7, 1949

COLONEL J. P. JOHNSON  
General Manager

Re: Loading Effects on Bridges  
Santa Fe Mikado type Engines  
Class 3160

The Cooper's Equivalent E-Loading and critical stresses which would be produced in our steel bridge structures have computed for the above engines and are tabulated on the attached sheets.

The Cooper's rating for the above engines is E-66 $\frac{1}{2}$  for spans up to ten feet and E-60 for longer spans.

Due to the heavy concentration on drivers (four heavy axle loads in 16'6" wheelbase) on these engines the floor beams and stringers in many of our steel bridges would be overstressed 8.75% to 48.5% (see tabulation of percent overstressed).

These engines could not be used even after rehabilitation work is completed between Portage and Fairbanks because of excessive stresses in the Tanana River bridge and Army surplus spans. They could be used between Seward and Portage providing the bridges are rebuilt for E-60 class power.

*R. A. Sharood*

R. A. Sharood  
Chief Engineer

Attachments

- 2 copies Coopers Rating Various Spans
- 2 copies Stressed in Steel Bridges
- Headquarters File

CLG:glS

CLASS 3160

MIKADO TYPE LOCOMOTIVE

EFFECT ON STEEL SPANS

Bridge Number	Span	Stress		Permissible Stress		Per Cent Over Stressed
		Under Class 3160 Loading Stringers	Floor Beams	Stringer	Floor Beams	
199.0 & Others	200'	19,160	21,250	17,625	17,775	8-3/4
269.9 & Others	125'	19,280	17,120	17,730	18,000(-)	19-1/2
287.7 & Others	150'	17,000	18,000	18,000(-)	18,000(-)	8-3/4
413.7 Tanana	700' Thru Truss*	27,060	33,000	23,420	22,830	0
413.7	118'** Dock Span	15,700	16,360	18,000(-)	18,000(-)	15-1/2
264.4 Susitna R.	504' Truss	16,250	18,370	18,000(-)	17,600	45
284.2 Hurricane	384-0 Arch	15,550	14,750	18,000(-)	18,000(-)	0
	123' Thru Truss	20,400	26,350	17,660	17,225	0
	Surplus					15.5
351.4 & Others	Top Chord	20,950		17,900		48.5
	Bot. Chord	23,230		18,000		17
350.3 & Others	70' Surplus Girder	Top Flange				29
		24,450		17,780		37.5

REMARKS: 413.7\* Silican Steel; 413.7\*\* - Carbon Steel Tanana

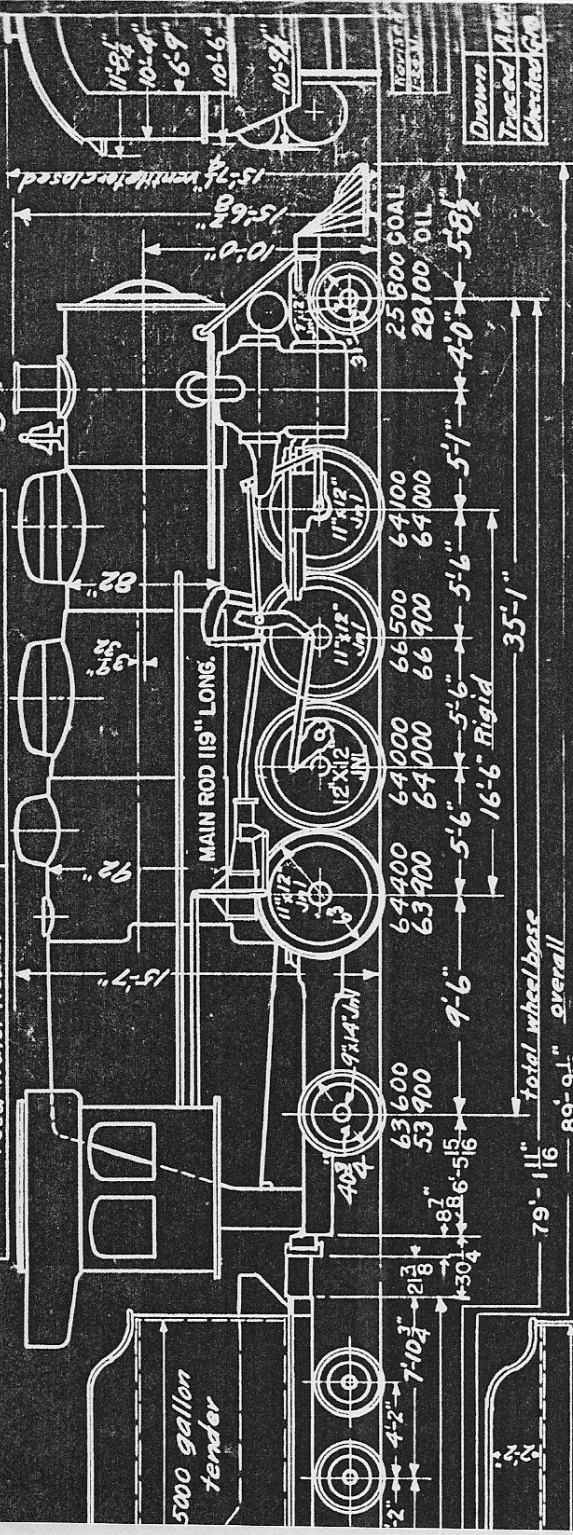
CLASS 3160  
 MIKADO TYPE LOCOMOTIVE  
 BRIDGE MOMENTS

Span Feet	Under Wheel	Distance Beam Center to Critical Wheel	Moment Kips ft.	Equivalent E-loading lb.	Remarks
4	3	0			
6	3	0	33.25	66 $\frac{1}{2}$	
8	3	0	49.88	66 $\frac{3}{4}$	
10	3	0	66.5	66 $\frac{3}{4}$	
12	3	1.38'L	86.7	61 $\frac{1}{2}$	
14	3	1.38'L	118.0	58	
15	3	0	164.0	59 $\frac{1}{2}$	
21	3	0	188.0	60	
27	3	1'-0"L	345	61	
31	3	1'-0"L	533	61 $\frac{1}{2}$	
60	5	1'-3"L	658	61	
80	15	4'-0"L	1900	58 $\frac{1}{2}$	
123	15	2'-9"L	3200	59	
150	12	2'-9"L	6850	56 $\frac{1}{2}$	
150	12	4'2"R	9850	55 $\frac{1}{2}$	
200	13	5'-0"L	17600	59	

**THE FORCE 63000**  
 ARDS APPLIED  
 CITY.

SCHMIDT SUPERHEATER	Two Sand Boxes
DUPLIX STOKER-COAL BURNERS	EXTENDED CAB
ENGS-3160-3187 BAKER GEAR	
ENGS-3188-3257 Walschaert Gear	
Feed Water Heater	

**CLASS 3160**  
 MIKADO TYPE.  
 ENGS-3160-3257



Built by B.L.W. 1918

CYLINDER	BOILER PRESS	FIRE BOX	GRATE AREA	FLUES		HEATING SURFACE		WEIGHT IN	
				LENGTH	WIDTH	FLUES	ARCH TUBES	WORKING ORDER	TOTAL
DIA STRK	LBS PER SQ IN	LENGTH	SQUARE FEET	24	51	24	23	ALL DRIVERS	ENGINE
27 32"	200	114	66.8	293	43	34	2958	COAL	COAL
								OIL	OIL
								258,800	340,800

5-17-29

Anchorage - March 3, 1949

MR. R. A. SHAROOD:

Reference is made to the attached correspondence from the Atchison, Topeka and Santa Fe Railway System, dated February 4, 1949, regarding 3160 Class Locomotives.

Please check the axle load on these locomotives to determine if they can be used on this Railroad when the Rehabilitation Program is completed. The thought I had in mind ~~was asking you~~ to check on this type of power is to purchase a heavier type locomotive to use on the Seward-Portage line in the event it is determined that this section of the road be rehabilitated and brought up to the same standard as the rest of the Railroad.

*J. F. Johnson*  
J. F. Johnson  
General Manager

RECEIVED  
MAR 4 1949  
The Alaska Railroad  
Office of Chief Engineer

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
THE ALASKA RAILROAD

Date 3-6-49

TO: C. L. Griffith

FOR:  
APPROVAL \_\_\_\_\_ NOTE & RETURN X  
COMMENT \_\_\_\_\_ PREPARE REPLY \_\_\_\_\_  
FILE \_\_\_\_\_ RECOMMENDATION \_\_\_\_\_  
INFORMATION \_\_\_\_\_ REVISION \_\_\_\_\_  
NECESSARY ACTION X SEE ME \_\_\_\_\_

REMARKS: This is RUSH.

FROM: Ras

# The Atchison, Topeka and Santa Fe Railway System

Railway Exchange, 80 East Jackson Boulevard, Chicago, 4

## OPERATING DEPARTMENT

G. H. MINCHIN,  
Vice President  
C. R. TUCKER,  
Assistant Vice President  
G. R. BUCHANAN,  
Assistant to Vice President  
J. P. MORRIS,  
Assistant to Vice President

A. C. JEPSON,  
Assistant to Vice President  
S. C. KIRKPATRICK,  
Assistant to Vice President  
L. D. COMER,  
Director of Employment  
J. M. NICHOLSON,  
Director of Research

Chicago, February 4th, 1949.

9390-2.

Colonel, J. P. Johnson,  
c/o Mr. James P. Davis.,  
Dir. of Terr. & Island Possessions,  
Department of the Interior,  
Washington, D. C.

Dear Colonel Johnson:

### 3160 TYPE LOCOMOTIVES

This is to acknowledge receipt of your letter of January 31st, answering mine of January 4th, asking for the weight of the 3160 Class Locomotives.

In this connection I am attaching hereto Classification Page No. 195-A which fully illustrates the 3160 Class Locomotives, giving the lightweight, loaded weight, fuel capacity, etc.

As soon as you have an opportunity to check as to the possible use of these locomotives on your railroad would appreciate hearing from you in this behalf.

Yours very truly,



Attach.

16

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
OFFICE OF THE SECRETARY  
DIVISION OF TERRITORIES AND ISLAND POSSESSIONS  
WASHINGTON

JAN 31 1949

Mr. J. P. Morris,  
Assistant to Vice President,  
The Atchison, Topeka and Santa Fe Railway System,  
80 East Jackson Boulevard,  
Chicago 4, Illinois.

Dear Mr. Morris:

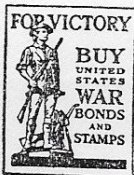
This is in reply to your letter of January 4, 1949, regarding the possibility of The Alaska Railroad purchasing some of the Mikado type Class 3160 locomotives.

I wish to state that the weight of the locomotives must first be considered before we can decide on any purchases, as the bridges on The Alaska Railroad may not take the 3160 Class locomotive. Also, The Alaska Railroad is interested in coal-burning locomotives only, and with the large-size tenders. If you could forward to me here the weight on drivers of these locomotives under working load, I will have a check made to determine whether or not these locomotives can be used on The Alaska Railroad, and if so, will check into the possibility of purchasing some of these locomotives.

Very truly yours,

(Sgd.) J. P. Johnson,  
General Manager,  
The Alaska Railroad.

JPJ:vb  
1/31/49





# The Atchison, Topeka and Santa Fe Railway System

Railway Exchange, 80 East Jackson Boulevard, Chicago, 4

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L. D. COMER,  
Director of Employment

J. M. NICHOLSON,  
Director of Research

On Line 4 January 1949.  
9390-2

Colonel J. P. Johnson  
c/o Mr. James P. Davis  
Dir. of Terr. & Island Possessions  
Department of the Interior  
Washington, D. C.

Dear Colonel Johnson:

I received a letter from our Mechanical Superintendent Pierson a few days ago in which he advised that you might wish to purchase six of our Mikado type Class 3160 locomotives.

As a result of our Dieselization program we will have a few of these locomotives that I believe will be suitable for your use.

If you are desirous of procuring some of these locomotives please advise and I will then furnish you the information you will require concerning the price, tractive effort, weight on drivers and other technical details you will probably want. You should also advise whether you want the coal or oil burning type locomotives.

Very truly yours.

