

EXPERIMENTAL FEATURES PROJECTS

CATEGORY 2

E X P E R I M E N T A L E X P A N S I O N B E A R I N G S T U D Y

INTERIM REPORT

OREGON STATE HIGHWAY DIVISION
Research Section

July 17, 1974

EXPERIMENTAL EXPANSION BEARING STUDY

Interim Report

The Oregon State Highway Division has undertaken an inspection program to gather data on several expansion devices. To date, six bearings have been included in the Category 2 Experimental Expansion Bearing Study. Three of the six bearings have been appraised as operating well, two have been found to be damaged and one was not evaluated since it had just been installed.

The information recorded during the inspections covered the amount of movement of the bearing, weather conditions during inspection, condition of the bearing and remarks pertinent to any repairs that were made or were to be made to the bearing. The inspections were scheduled during January and July in an attempt to record data during extreme weather conditions.

Unfortunately a cost comparison could not be made since the installed costs of the various bearing devices were unobtainable since they were not a specific bid item.

A summary of the evaluation of performance to date follows:

Experimental Expansion Bearings

<u>Bearing Type</u>	<u>Structure</u>	<u>Location</u>
LE100 & LF100 by Conenco Inter- national Ltd.	Cove Ave. #9633	Bent 2 Bent 4

Remarks: The bearings appear to allow full movement but there is a problem with the assembly. The 1/8-in. teflon plate located between the stainless steel plate and the base plate has moved and, in one case, is 1/2-in. out of the assembly. Repairs of these bearings are being considered. The future acceptance of this bearing will depend on test results showing an absence of movement of the teflon pad.

<u>Bearing Type</u>	<u>Structure</u>	<u>Location</u>
Shortspan Type D by Spencer Co.	McAlister Lane #9634	Abt. 1 Abt. 2

Remarks: All bearings are working well and are in good condition. The bearings were placed too close to the edge of the pedestal during installation and slight bearing movement has caused minor spalling on the pedestal.

Lubrite "F" by Merriman Inc.	Campbell Street #9515	Bent 2 Bent 3
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Remarks: All bearings are in excellent condition and are functioning well.

Fluorogold Slide Bearing by Fluorocarbon Co.	Mehama Bridge #533B	Bent 1 Bent 5
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Remarks: The initial inspection was made and reference marks placed on 6 beams. The bearing appears to be functioning well with no signs of distress. It is too early to evaluate the performance of this bearing.

Uni-Ton by Fluorocarbon Co.	So. Santiam R. Br. (Sanderson) #1771A	Bent 2 (175 ton) Bent 3 (1,350 ton) Bent 5 (175 ton)
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Remarks: All bearings appear to be functioning well as to longitudinal expansion and contraction movement. Some damage has been reported, however, to two bearings at Bent 2 and all four bearings at Bent 5. This damage consists of missing flange bars located on the top bearing plates. Although this damage occurred during construction, it is felt that an inadequate weld was used to attach the bars to the plates. Since these bars are to prevent transverse movement, a full penetration weld is desired.

Rota bearings by J. E. Goodman Sales Co.	Fremont Int. #9268
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Remarks: Twenty-six Rota bearings were examined and all were found to be functioning well. These bearings were designed for rotation only and the amount of anticipated movement is very small.

Continued surveillance and evaluation of these bearings are planned.

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