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DYNAMIC ANALYSIS OF A MONORAIL BEAM FOR AN OVERHEAD CRANE

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Naba Raj Gairhe

ABSTRACT

A monorail beam is subjected to dynamic load. The design engineer is more concerned with its vibration behavior under undamped, no load condition to avoid resonance, which may lead to a catastrophic failure. One of the major failure reasons is formation of crack and its propagation, over a time. Emphasis is to be given to the investigation of the natural frequency and corresponding natural modes of the beam material which will furnish useful data, for prevention of crack.

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Correspondence to **Naba Raj Gairhe** , K.V. Ramana and D.V.A Ramasastry
Designation:- **Department of Mechanical Engineering KLEF (KL University), Vaddeswaram AP, India**

Introduction

Earlier works on monorail beam have focused mainly on lateral distortion, buckling and crack analysis [1, 2, 3]. Trahir [4] developed a method for designing a wide range of single span, double span, cantilever and overhanging monorails for their flexural torsional buckling analysis.

A Good Introduction :-

Extremely briefly depict the exploratory configuration and how it achieved the expressed destinations.

Materials

Monorail crane is the principle transporter for all plant and equipment. Layout of a structure is shown in Fig.1. The dimensions and properties as per the BS4-1:1993 are given in Table 1.

A Good Materials :-

Materials may be accounted for in a different passage or else they may be distinguished alongside your systems. Inc or supplies that are not generally found in research centers.

Result

The computed values, namely natural frequencies and max deflections are given in Table.3, for the selected modes. The deformed shapes of the beam are shown in Fig. 5. Mode shape plots are illustrated in Fig. 6.

A Good Result :-

Results are as per aims and objective and useful to further research .

Conclusion

The dynamic analysis of industrial monorails is gaining importance. Analysis has been done on an overhead crane monorail. The theoretical investigation shows the mode shapes and natural frequencies under undamped and load free condition for 1st, 5th, and 10th modes.

A Good Conclusion :-

Thus, the research have wider scope for new academicians and research scholars.

References

- N.S. Trahair "Distortional buckling of overhanging monorail beams" Engineering Structures 32(2008) 3213-3218.
- O. Kerem Murat and C. Topkaya "Lateral buckling of overhanging crane trolley monorails" Engineering structure 28(2006) 1162-1172
- Stifrin E.I and Ruotolo R " Natural frequencies of a beam with an arbitrary no of cracks" Journal of Sound and vibration; 1999; 223(3): 409-23

A Good References :-

There are Places where the Author Naba Raj Gairhe , K.V. Ramana and D.V.A Ramasastry Need to Cite a Reference, but Have Not

SUMMARY OF ARTICLE

No.		Very High	High	Average	Low	Very Low
1.	Interest of the topic to the readers	✓				
2.	Originally & Novelty of the ideas		✓			
3.	Importance of the proposed ideas		✓			
4.	Timelines			✓		
5.	Sufficient information to support the assertions made & conclusion drawn	✓				
6.	Quality of writing (Organization, Clarity, Accuracy Grammer)	✓				
7.	References & Citation (Up-to-date, Appropriate Sufficient)					

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REVIEWER COMMENTS

- The writing audit was careful, the approach was carefully exhaustive and fused the utilization of sufficient quantities of tests in dust size examination and blast tests.
- I discover no shortcoming at all with the routines, information examination, or conclusions.
-

Authorized Signature

Dr. Ashok Yakkaldevi
Review Editor

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Ph.: 0217-2372010 / +91-9595-359-435

Email.: ayisrj2011@gmail.com
Website.: www.isrj.org