Distribution Packaging Technology, edited by R. Fiedler, Institute of Packaging Professionals, 1995

Forest Products Laboratory General Technical Report FPL 22, An Assessment of the Common Carrier Shipping Environment, F. Ostrem and W. Godshall, 1979

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United Parcel Service web site, available at http://www.ups.com/about/story.html

## **Other Related Materials**

Sheeman, L. R., & Singh, S. P. (1997, August/September). Analysis techniques for package distribution environment data. Test engineering & management, 18-20.

This paper provides statistical techniques to analyze sorted drop height and the interpretation for use in package drop testing protocols.

Cheema, A., & Singh, S.P. (1996). Measurement and analysis of the overnight small package shipping environment for Federal Express and United Parcel Service. <u>Journal of Testing and Evaluation</u>, 24(4), 205-211.

The purpose if this study was to measure and characterize the various impacts (free fall drops, lateral kicks, and tosses) received by packages in the overnight small parcel environments found at Federal express and United Parcel service.

Singh, S.P. (1993). <u>Designing packages for overnight parcel environment.</u> East Lansing: Michigan State University, School of Packaging.

This paper presents the results of a study on the package dynamics in the overnight small parcel delivery system.

Singh, S. P., & Voss, T. (1992). Drop heights encountered in the United Parcel Service small parcel environment in the Unites States. <u>Journal of Testing and Evaluation</u>, 20(5), 382-387.

This study investigated the effect of drops, tosses, and kicks and the effect of the weight and volume shipped encountered in the United Parcel Service small parcel environment in the United States.

Pierce, R.S., & Singh, S.P. (1999, April). Parcel labels, distribution pose challenges for drop orientation. Packaging Technology & Engineering, 31-33.

This study evaluated the effect of the label placement on drop orientation in the small parcel environment.

Godshall., W.D., & Ostrem, E.F (1979). <u>An assessment of the common carrier shipping</u>
<a href="mailto:environment.">environment.</a> Madison, Wis: U.S. Department of Agriculture.

This assessment study is on the available data and information describing the common carrier shipping environment. It includes major shipping hazards of shock, vibration, impact, temperature and the humidity associated with handling, transportation and warehousing operations of a typical distribution cycle.

Daniels, J.N., & Sanders, R. T. (199?). <u>New approaches to defining the distribution environment.</u>

San jose, CA: International Business Machines Corporation.

This paper reviews current package-performance standards and their relationship to the distribution environment. The review investigates the roots of these standards in terms of data acquisition, interpretation and assumptions.

Rutledge, L., Wood, Tom., & Zhou, Y.(199?). <u>Measurement and shock analysis of shock and vibration in the shipping environment.</u> Memphis, TN: Federal Express Corporation.

The report summarizes the distribution system analysis, design of experiment, instrument setup, instrument calibration, test schedule, and data analysis.

Pierce, R.S., & Young, E.D.(199?). <u>Packaging handling in less-than truckload shipments: Focused</u>
simulation measurement and test measurement. Unpublished manuscript (????)

This project has demonstrated that a test specification based on field measurement may differ from generalized tests in both the recommended number of drops and the drop height distribution.

Pierce, R. S.(199?). Packaging handling in less-than-truckload shipments worldwide: <u>Focussed</u> simulation measurement and test development. ??, ??: Eastman Kodak Company.

This paper studied the physical distribution handling environment of Less-Than-Truckload (LTL) shipments in United States, Europe, and Australia.