



PB99-177008

**MARKETING OF CONTAINER-ON-BARGE
(COB) TRANSPORTATION TO PROMOTE
UTILIZATION OF ARKANSAS WATERWAYS**

MBTC FR-1100-1

Bonnie S. Boardman and Eric M. Malstrom

The work in MBTC project 1100 is documented in three parts:

1100-1 Final Report

1100-2 Reference [2], Software User's Manual

1100-3 Reference [3], Cost Analysis Tables

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REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE August 16, 1999	3. REPORT TYPE AND DATES COVERED 11/98 - 8/99	
4. TITLE AND SUBTITLE Marketing of Container-on-Barge (COB) Transportation to Promote Increased Utilization of Arkansas Waterways			5. FUNDING NUMBERS	
6. AUTHOR(S) Bonnie Boardman, Ph.D. Eric M. Malstrom, Ph.D.				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Mack-Blackwell Transportation Center 4190 Bell Engineering Center University of Arkansas Fayetteville, AR 72701			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Mack-Blackwell Transportation Center 4190 Bell Engineering Center University of Arkansas Fayetteville, AR 72701			10. SPONSORING/MONITORING AGENCY REPORT NUMBER 1100-1 Final Report 1100-2 User's Manual 1100-3 Cost Tables	
11. SUPPLEMENTARY NOTES Supported by a Grant from the US Dept of Transportation Centers' program.				
12a. DISTRIBUTION/AVAILABILITY STATEMENT National Technical Information Service 5285 Port Royal Road Springfield, VA 22161			12b. DISTRIBUTION CODE NA	
13. ABSTRACT (Maximum 200 words) One of the most cost efficient methods of conveyance is barge transportation. However, the waterways in and around Arkansas are greatly underutilized. There is a significant risk of the federal government shutting down the McClellan-Kerr Arkansas River Navigation System if river traffic cannot be substantially increased. Part of this under utilization is attributable to a lack of marketing of the waterways. Many organizations that could effectively use water transportation as an intermodal link have been reluctant to do so. This is due to inaccurate perceptions of service availability and shipment throughput times. Most shippers are unaware of transportation rate savings that can be realized through the use of barge transportation. This project attempted to address the problem of Arkansas' underutilized utilities by educating shippers inand around the State about the advantages of barge transportation and how these advantages might be put to use for their company.				
14. SUBJECT TERMS barge transportation, intermodal transportation, cost software			15. NUMBER OF PAGES 6	
			16. PRICE CODE NA	
17. SECURITY CLASSIFICATION OF REPORT none	18. SECURITY CLASSIFICATION OF THIS PAGE none	19. SECURITY CLASSIFICATION OF ABSTRACT none	20. LIMITATION OF ABSTRACT NA	

1. Report No.		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle Marketing of Conainer-on-Barge (COB) Transportation to Promote Increased Utilization of Arkansas Waterways				5. Report Date August 16, 1999	
				6. Performing Organization Code	
7. Author(s) Bonnie Boardman, Ph.D.; Eric M. Malstrom, Ph.D.				8. Performing Organization Report No. 1100-1 Final Report 1100-2 User's Manual 1100-3 Cost Analysis Tables	
9. Performing Organization Name and Address Mack-Blackwell Transportation Center 4190 Bell Engineering Center University of Arkansas, Fayetteville, AR 72701				10. Work Unit No. (TRAIS)	
				11. Contract or Grant No. DTRS92-G-0013	
12. Sponsoring Agency Name and Address Mack-Blackwell Transportation Center 4190 Bell Engineering Center University of Arkansas Fayetteville, AR 72701				13. Type of Report and Period Covered 11/98 - 8/99	
				14. Sponsoring Agency Code	
15. Supplementary Notes Supported by a Grant from the US Dept. of Transportation Centers' Program.					
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19. Security Classif. (of this report) Unclassified		20. Security Classif. (of this page) Unclassified		21. No. of Pages 6	22. Price N/A

**Marketing of Container-on-Barge (COB) Transportation to
Promote Increased Utilization of Arkansas Waterways**

MBTC Report FR 1100-1

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PROJECT ABSTRACT

One of the most cost efficient methods of conveyance is barge transportation. However, the waterways in and around Arkansas are greatly under utilized. There is a significant risk of the federal government shutting down the McClellan-Kerr Arkansas River Navigation System if river traffic cannot be substantially increased.

Part of this under utilization is attributable to a lack of marketing of the waterways. Many organizations that could effectively use water transportation as an intermodal link have been reluctant to do so. This is due to inaccurate perceptions of service availability and shipment throughput times. Most shippers are unaware of transportation cost savings that can be realized through the use of barge transportation.

This project has addressed the problem of Arkansas' underutilized waterways by educating shippers in and around the State about the advantages of barge transportation and how these advantages might be put to use for their company. This education has been accomplished through the demonstration and distribution of intermodal cost analysis software developed with the support of a previous Center grant [6].

BACKGROUND

River usage and river ports can positively affect both the local and regional economies in which they are utilized. Ports can provide needed transportation services, such as warehousing and repackaging to existing industries in the area. Arkansas' ports also provide an affordable route to the global trade market through international ports in New Orleans. Ports can also help to attract new business to the region. The more intermodally effective the port, the more attractive it becomes to outside industries.

Water transportation offers considerable cost savings when compared to other freight modes. Barges have a comparably enormous carrying capacity while consuming less energy. This is due to the fact that a large number of barges can move together in a single tow that is controlled by only one power unit. As a result, when compared to barge transportation costs, rail is nearly twice as costly and truck is nearly four times higher.

In order to take full advantage of the many benefits of the ports of Arkansas, it is necessary for both public and private entities to become aware of the economic benefits to barge transportation as well as existing and potential customers.

PROJECT OBJECTIVES

Two previous MBTC projects have addressed intermodal transportation with barges. The first addressed real-time routing of shipments considering transfer costs [1]. The second completed a feasibility assessment of truck-barge intermodal freight

transportation [6]. These projects have yielded a software decision support tool that calculates the least cost transportation alternatives considering transportation costs, transfer costs, and inventory/carrying costs. This tool can be of use to shippers considering intermodal transportation alternatives.

One objective of this research was to identify those shippers in and around Arkansas who could benefit from use of barge transportation. After these shippers were identified, the second objective was to train them in using MBTC intermodal cost software. Use of the developed software will help shippers identify more cost-effective intermodal combinations involving container-on-barge (COB) shipments, thus promoting waterway transportation.

Another objective of this project was to develop a comprehensive set of transportation cost tables that would allow users to look up break-even points between alternative modes of transportation. These break-even points involve the mileage at which one mode of transportation becomes more economically feasible than another under a given set of conditions.

PROJECT DESCRIPTION

The first phase of this project involved determining which shippers could benefit from using COB for their cargo transportation needs. Much insight can be gained about the suitability of individual commodities for inland river transportation through examination of historical data shown in Figure 1.

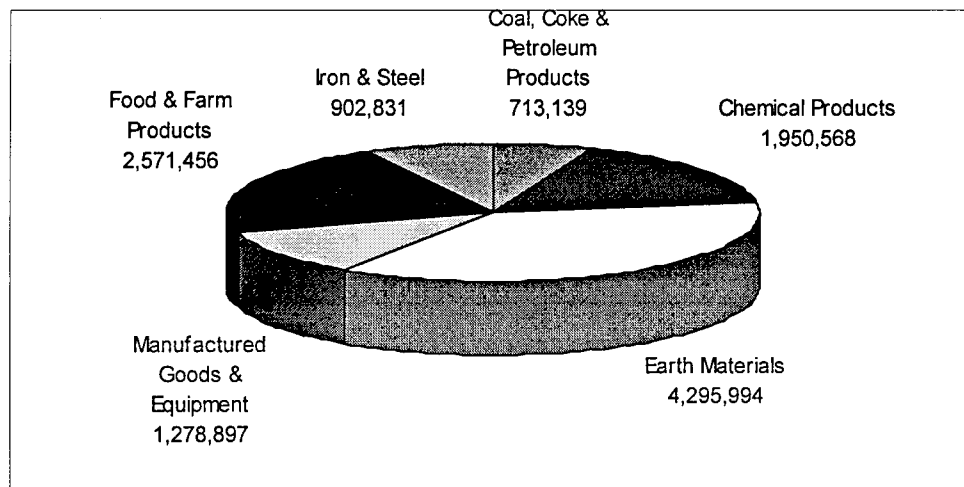


Figure 1. McClellan-Kerr Tonnage by Commodity Type

Thousands of Tons - 1996

In 1996, earth materials (including forest products, wood, wood chips, sand, gravel, crushed stone, salt, metallic ores and other minerals) accounted for 37 percent of

waterborne commerce on the McClellan-Kerr Arkansas River Navigation System. Approximately 22 percent of all shipments were food and farm products, and 17 percent was chemicals and related products (including fertilizers). Primary manufactured goods made up 11 percent of the total and iron and steel made up 8 percent. Coal, coke and petroleum products account for the remaining 6 percent of all shipments [7].

The second phase of the project was the actual training of shippers. Training consisted of the presentation of intermodal cost analysis software and software documentation, along with hands-on tutorials used to demonstrate realistic examples to the participants. As part of the project, all training participants were provided with a copy of the software and a user's manual which was also developed as part of this project [2]. Follow-on technical support and future software upgrades will be available to all training participants. Table 1 presents a list of the companies that were contacted as part of this project and the number of participants present at each of the training sessions.

Organization	Location	Date of Training	Number of Trainees
Area Port Authorities	Little Rock, AR	3-May-99	10
Riceland Foods	Stuttgart, AR	9-May-99	2
Economic Development, Transportation , Import and Export Conference	Fort Smith, AR	22-May-99	75
New Barge Transportation Technologies Seminar	Pittsburgh, PA	29-Jun-99	43
FedEx Corporation	Memphis, TN	1-Jul-99	2
International Paper	Memphis, TN	1-Jul-99	11
NuCor Steel	Blytheville, AR	9-Jul-99	8
Council on Cooperative Intermodal Transportation Enhancement Meeting	Little Rock, AR	12-Jul-99	45

Table 1. Trainee participants

As previously discussed, a detailed User's Manual was also developed as part of this project [2]. This manual guides the user through the installation and use of the

developed transportation software. Several detailed examples are also provided in the User's Manual. Copies of the User's Manual along with a copy of the software can be obtained from the Mack-Blackwell Transportation Center at the address provided below.

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Finally, a set of Intermodal Transportation Cost Analysis Tables was developed [3]. It is an often quoted theory in the transportation industry that truck transportation is more appropriate for hauls that are 500 miles or less, and beyond that distance, rail is more appropriate. The tables enable shippers to easily determine the shipping distance at which barge transportation affords cost advantages.

The developed document [3] consists of a series of cost analysis tables that can be used by shippers and transportation service providers. The tables are presented over an exhaustive range of transportation cost and shipment characteristic parameters. The tables presented in this document enable the user to determine the least cost transportation mode given various characteristics of the shipment being transported. Instructions provided with the tables demonstrate to prospective users how they may be effectively used to analyze alternative modes of transportation over a multitude of rate, distance, and shipment characteristic combinations. The tables are best used for containerized shipments. Copies of the cost analysis tables can be obtained by contacting the Mack Blackwell Transportation Center at the above address.

SUMMARY

This report and References [2 ,3] collectively document the work completed in this project. Separate report numbers have been used for each of these documents. The developed software accompanies Reference [2]. This report, Reference [2], and Reference [3] may be requested collectively or separately from the Mack Blackwell Transportation Center at the address listed in the preceding section.

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