Container-on-Barge

Pre-Feasibility Study

Final Report

Port of Pittsburgh Commission

James R. McCarville, Executive Director

August 2003

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July 1, 2003

Introduction

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Summary of Tasks

Task 1: Formation of a PA Barge Shippers' Council

The Port of Pittsburgh Commission (PPC) will identify Pennsylvania and regional industries and companies engaged in trade with Monterrey, Mexico, and waterway points in between, interested in joining a PA Barge Shippers' Council. The PPC, in partnership with the Council, will formalize the organization; document technical problems they perceive impeding the increase barging opportunities and help guide market research. The council could serve as a model for ports throughout the inland waterway transportation system (IWTS).

Task 2A: Market Analysis

The PPC will assist MARAD in convening a working group of key port and barge service providers to document system-wide impediments to the development of new cargoes, such as intermodal, international, container-on-barge, and project cargo shipments, etc. and strategies to overcome those impediments.

Task 2B: Mexican Market Case Study

The PPC will retain a consultant to research the Brownsville-Monterrey market, identify the potential leads and additional users to the waterways, interface with the PPC staff to develop said leads, represent the Port of Pittsburgh and the IWTS capabilities, document the key shippers and the advantages/disadvantages they perceive to entering international IWTS transportation to/from Mexico, help develop Spanish language marketing materials and facilitate activities indicated in Task 3.

Task 3: Establish a Mexican Barge Shippers' Council in Monterrey, Mexico

The PPC will form and host a Mexican Barge Shippers' Council (MMBSC) meeting (less formal than the PA Council), meet with previously screened potential shippers to discuss impediments to greater waterway usage and devise strategies to increase IWTS commerce. It is anticipated that the MMBSC would eventually expand to cover issues in all U.S. IWTS ports and waterways.

Task 4: Interim Report

An interim report will be submitted by October 31 documenting information gained, lessons learned and strategies suggested. Please see Appendix M for a copy of the Interim Report

Task 5: Final Report

The draft report will be finalized after review by MARAD.

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This report intends to serve as a useful guide to anyone interested in organizing barge traffic to Mexico and COB traffic anywhere on the inland river system. Unless otherwise indicated, the "inland river system" for purposes of this report refers to the Mississippi and Ohio rivers and their navigable tributaries. It uses the Pittsburgh to Brownsville route as a case study. Brownsville, Texas, is the gateway to the northeastern area of Mexico, including Monterrey. Most conclusions, however, will be applicable for any part of that inland system. The report addresses preliminary steps taken before the start of this project and recommends steps to be taken in the future to continue the momentum.

Please note that while there are references to COB initiatives based on international cargo arriving at deepwater Gulf ports, such as the successful service of Osprey Line, this report is more focused on the issues of inland ports, including the special problems created by locks and

dams on the inland system and the need to analyze domestic traffic as well as international traffic.

The findings rely on a series of groups focused on the same issues. They include the two barge shippers' councils; the Maritime Transportation System's National Advisory Council's Inland Waterway Intermodal Team (MTSNAC-IWIT); two MARAD sponsored groups: the Inland Waterway Intermodal Cooperative Project (IWICP) and the Gulf Rivers' Intermodal Project (GRIP); and subgroups of the trade association of Inland Rivers Ports and Terminals, Inc. as well as the Inland Waterways Committee of the Transportation Research Board. While participation varied with these groups, the consistency of their findings makes it important to reference them as well as prior reports on the subject.

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General Conclusions

1. The greatest opportunities for new cargo development were identified as the development of barge load and less than barge load (LBL) trade with Mexico and developing container-on-barge operations (COB). The COB operations could be used to develop import and export trade with Mexico; import and export trade through the Gulf Ports of New Orleans and Houston; the repositioning of empty containers; and, in some cases, the domestic movement of containers. Osprey Line has already begun successfully moving COB shipments between Houston and New Orleans and is in discussion with routes from Houston to Brownsville and Baton Rouge and Memphis. Intermodal Logistics Group (ILG), ACBL and MEMCO barge lines are also very interested in potential service.

2. The impediments to further developing these trades are formidable. For this trade to be successful, it needs to be efficient, reliable and cost-effective. Pittsburgh's location as the northeastern most point on the inland waterways has the highest risk of inefficiencies due to the number of locks and dams barges need to maneuver in and out of the area. This could be detrimental to reliable service and transit times. Most terminals on the inland waterway lack the knowledge of handling containers and the infrastructure for storing loaded and empty containers at their facility and need guidance. The facilities themselves were not deemed to be a significant impediment, nor were any of the obstacles considered insurmountable.

3. The service lends itself to a single intermodal operator to seamlessly handle a prospective shipper's freight from point of origin to point of destination.

The strategies needed to overcome these impediments need to be comprehensive, including technology, marketing, infrastructure, current business practices and industry organization. Many of these issues are being addressed by the PPC and by other groups operating throughout the IWTS in a consistent, but uncoordinated manner. This entire project calls for synchronized planning, involving not only the ports, shippers and carriers, but also the state departments of

transportation and economic development, the regional and metropolitan planning organizations, and the federal offices of MARAD, the Coast Guard and the U.S. Army Corps of Engineers.

Coordination efforts to date, however, are insufficient to successfully execute a sustained, multi-port COB service on the inland system. Models, such as MARAD's Ship Operations Cooperative or Cargo Handling Cooperative Program, should be considered to better coordinate these efforts, hopefully with matching funds. Some aspects of the inland market are so distinct that it will likely require a subset cooperative, or sister cooperative, if one is formed, related to COB service from international ports in the Gulf.

Marketing efforts to date are likewise insufficient to sustain a multi-port COB service on the inland system. This report, however, provides a marketing methodology that would allow any port on the inland system to identify initial demand for COB services at their port.

While additional marketing research will be ongoing, the next steps also include a trial or demonstration project to move containers by barge on that part of the river system that is maintained by locks and dams. This is likely the only way that the chicken and egg problem described in this report can be resolved.

Finally, the need for federal assistance must be addressed. The ports of Houston and New York have successfully accessed CMAQ (Congestion Mitigation and Air Quality) funds that are part of the TEA-21 (Transportation Efficiency Act of the 21st Century) legislation. That legislation is currently before the Congress for renewal in the form of the SAFTEA (Safe, Accessible and Flexible Transportation Act) bill that is generally much more favorable to freight issues than was TEA-21. SAFTEA maintains the CMAQ provisions and includes funding for intermodal connectors and freight gateways. Uses of the SAFTEA money for COB will likely be justified to the extent that they alleviate congestion or air quality issues. If properly structured, COB services would compliment service by truck or train.

A March 2003 study by the Foundation for Intermodal Research and Education (FIRE) showed that converting a Port of New York to Pittsburgh move from truck to train would result in a net public benefit of about $53 per truck for a 363 mile trip, or 15 cents per mile. While no similar studies have been done for the inland waterway system, at least this much public saving would be expected if movement were converted from truck to barge, thus indicating that the use of CMAQ money would be justified for this purpose.

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The Pittsburgh Barge Shippers' Council (PBSC) Model

When the Port of Pittsburgh Commission (PPC) started to create a Barge Shippers' Council, we developed a list of shippers' criteria to give us the best opportunity for success. The criteria consisted of:

1. The shippers were currently using barge shipping as one of their modes of transportation. As a result, they would have knowledge of the inland waterways, current barge capabilities and terminal capabilities.
2. The shippers also had potential non-traditional barge shipments that they could possibly consider shipping less-than barge load or containerizing their freight and using barge for export or import shipments.
3. All shippers controlled the transportation of their freight.

By involving a diversified group of shippers, we were able to identify the issues that prevented them from using barge shipments for other than bulk. It was important that the members of the council be experienced, aware of their company's supply chain needs, and possess an understanding of the significant cost savings that could be recognized if they had an alternative mode in barge shipping for their existing non-traditional freight, currently moving by rail or truck.

We also made the local trucking firms and railroads aware of our effort, so that they had an understanding that we were trying to enhance and add value to their service or not compete head-to-head with them. The council is kept current on our progress and tries to meet on a semi-annual basis.

To date, council members have identified the following technical and legal problems with operating a container-on-barge (COB) service:

1. The need to easily obtain reliable, prompt and readily accessible information on barging costs, transit times and intermodal connectors.
2. The need to identify an entity to oversee the operation (i.e. bookings, scheduling,

customer service, and bills of lading. This entity would also be charged with the responsibility of negotiating the service contracts with the barge companies and river terminals.

3. The need to identify the insurance responsibility when handling multi-shippers and multi-shipments on one barge.

4. Dunning and equipping existing barges to handle containers.

5. Ensuring terminals along the inland waterways have the equipment, facilities and technical know-how to handle twenty and forty-foot containers.

The members of our shippers' council have enthusiastically participated in our process and continue to offer support as we try and diversify the commodity mix on the inland waterway system.

PBSC Evaluation of the Shipper Associations and the Shipping Act of 1984

The Shipping Act of 1984 was reviewed for organizational requirements. It was deemed unnecessary to formally organize under the Act at this time. It is useful, however, to indicate the advantages and requirements of such organization when a group of shippers is prepared to negotiate international pricing.

The Shipping Act of 1984 recognized three distinct types of ocean intermediaries that represent shippers in negotiating service contracts. They are Freight Forwarders, Non-Vessel Operating Container Companies (NVOCC) and Shippers' Associations, which represent multiple shippers and can negotiate service contracts with carriers. A description of these intermediaries can be found at < http://www.apl.com/assets/applets/osra.pdf >, "U.S. Trade: Clear Sailing in Unchartered Seas and Container Shipping After Deregulation."

The formation of these entities provides certain anti-trust exemptions allowing shippers in international trade to discuss pricing under certain circumstances. The requirements for filing with the Federal Maritime Commission can be found at < www.fmc.gov >, "§ 1704. Agreements."

Further information can be found in Appendix C, "The Anti-Trust Division's Approach to Shippers' Associations." As the article indicates, the Department of Justice takes an interest whenever monopoly or monopsony power would appear to be exercised. While it is unlikely that our organizations would ever exercise such power, it would still be much safer to organize and file to gain potential benefits and protection prior to entering into any actual negotiations. Note that filing does not provide any anti-trust protection or exemptions relative to domestic negotiations.

The Council also considered if it would be useful to affiliate with a national shippers association, such as NUSA. It was likewise determined, since the principal benefit would be rate negotiations that membership was not warranted at this time, and that formally organizing the Pittsburgh Barge Shippers' Council as a Shippers' Association was premature at this time.

The Progress of the Council

The first task was to form a council of barge shippers. In order to identify willing participants for our barge shippers' council in Pittsburgh, Mary Ann Bucci, PPC staff, met individually with a variety of shippers to explain the concept and to identify shipper interest in participating in such a council.

The first meeting of the Pittsburgh Barge Shippers' Council (PBSC) was held on November 16, 2000 at Chartier's Country Club in Pittsburgh.

Initial members were:

M. Feldmaier, Ashland Chemical; W. Brown, Carmeuse; M. Shurina, Falconbridge;

C. Dunlap, Indspec Chemical; J. Frye, KDL Logistics; M. J. Geyer, Miller and Company; K. Parks, Pittsburgh Logistics and T. Onufer and D. Fleming U.S. Steel. J. Anglin, a PPC Commissioner and retired International Distribution Manager for US Steel, chairs the Council. Mary Ann Bucci and James R. McCarville, PPC, staff the Council.

The purpose of this meeting was to identify the barriers to new cargo development, specifically, container-on barge development, and to explain how a shippers' council could help address such problems and ensure shipper participation in the PPC's efforts to resolve them.

Initial Assumptions:

1. Freight traffic in the U.S. is expected to double in the next twenty years, placing excessive demands on existing road and rail infrastructure.

2. COB is a highly successful alternative for road and rail freight movements in Europe, the Pacific Northwest, and other places in the world.

3. COB is technically feasible, economically attractive and environmentally advantageous for the Ohio-Mississippi River System.

4. COB could utilize existing jumbo barges, holding 72 TEU containers (stacked 3-high), and existing river terminals that have 25 ton plus cranes and storage capacity for 180 containers in order to initiate service.

Shipper Identified Obstacles to COB Traffic on the Inland Waterways:

1. **The Chicken and Egg Syndrome.** Container shippers are reluctant to commit cargo for a service that the barge lines do not offer on a predictable, regular and reliable basis, with point-to-point rates. Barge lines are reluctant to commit barges to a service without the guarantee of sufficient cargo.

2. **Historical Perspectives.** Previous failed COB attempts have convinced some skeptics that it is impossible to do COB on the Ohio-Mississippi system, but the failures may have been due to specific business problems. The previous attempts on the lower Mississippi were hampered by cut-rate rail competition in an extremely competitive north-south rail network that parallels the Mississippi River; the lack of deep pockets to withstand such competition; the lack of experience in dealing with unique container handling requirements; and, for both the Mississippi and Ohio systems, the dependence on single

shippers who may change their supply chain logistics requirements for other business reasons.

3. **Complex Research and Operational Organization.** Efficiencies of scale indicate 72 TEU containers could be organized and staged together at one time for one destination to minimize time-consuming, multiple stops and possible re-stowage of cargo. Identifying the shippers and organizing the COB service is a complex problem and needs to be done at both ends of the system (Pittsburgh and Brownsville) as well as other ports that wish to participate. Identifying the potential customers in the U.S. for inland ports will be more difficult than for ocean ports since the utility of PIER data is less applicable. Identifying potential customers in the Mexican market, where there is less familiarity with barge transportation, will require extensive personal contact.

4. **Terminal Requirements.** Some river terminals may need to upgrade key equipment such as spreader bars and container forklifts, as well as technical knowledge of the unique container handling characteristics (estimated cost between $300,000 and $1,000,000) in order to initiate service. Some terminals may consider specialized container facilities of 5-10 acres with mobile multi-purpose harbor cranes (cost under $5 million) to optimize efficiency, but no extensive investments are required to start the service.

5. **Insurance.** Insurance requirements on traditional barge cargo may need to be increased to reflect the high value of containerized cargo.

The second meeting was held on January 25, 2001, at the Rivers Club. J. Sebbens, Koppers, and W. Rojas, Pittsburgh Logistics, joined initial members. Carnegie Mellon University (CMU) students examined existing E-Commerce systems and, subsequently met with members of the Shippers' Council to get their input on the development of a system specific to COB shipping.

At the second meeting, the Council served as a group to "test out" a new marketing technology (being developed under a separate U.S. DOT grant to the PPC and our sub-grant to CMU) to simplify the process of gaining information on barge costs and times. This was an E-Commerce web site to organize and market COB shipments to/from Pittsburgh and eight other inland waterway destinations, including Houston and Brownsville. CMU students examined existing E-Commerce marketing systems and developed Project "SmartBarge," which addressed many of the organizational problems involved in matching shippers and barge companies. The first phase proposed matching origins and destinations of eight inland waterway ports and Pittsburgh. Times and estimated rates were provided by carriers and collated by the PPC. The Council deemed this as an excellent marketing tool to overcome COB impediments.

There was considerable enthusiasm for the project, which was completed by a CMU student practicum with supervision by PPC. Additional problems identified were the need to get (1) cooperation of the barge lines, and (2) participation of shippers in regular moves to allow their cargoes to act as an anchor or magnet cargo to attract other shippers. The PPC project leaders then also met with US Steel and American Commercial Barge Line to explain the project. Both parties supported the effort.

The third PBSC meeting was a seminar on March 15, 2001, at which the Council helped the PPC organize to discuss "The Changing Nature of Inland Distribution" with the broader shipping

community. A list of attendees and an agenda are included in Appendix E.

Issues Explored:

1. Projected congestion on our road and railways in the next 20 years;
2. Proposals of the Port of New York / New Jersey to work with Pittsburgh as a potential inland (ocean) port facility;
3. The challenges and opportunities associated with improving container rail service to Pittsburgh and implementing a COB service for the inland waterways, including the repositioning of empty containers; and,
4. The role of a SmartBarge prototype in reducing the problems associated with COB.

Smart Barge. The SmartBarge prototype was well received. The general comment was that it eventually needed to become a standard for the industry, including multiple origins/destinations (the prototype required either the origin or destination be Pittsburgh) and that it eventually include intermodal point-to-point costs in addition to port-to-port costs.

These important comments were incorporated into SmartBarge revisions, which can be found on the Internet at < www.SmartBarge.com >. Excerpts from the website can be found in Appendix F.

Pittsburgh Shippers and New Commodities. In the course of these meetings several commodities shipping from Pittsburgh, PA, have been identified as potential cargoes for less-than barge load and COB service. These commodities include forest products and raw materials that have less exposure to inventory costs. The shipper and products are as follows:

1. Indspec Chemical – Sodium Sulfite
   Originating in Schenley, PA and destined for South Africa. The freight could move in containers for export through New Orleans.
2. Falconbridge – Nickel Alloy
   Originating in the Dominican Republic and coming in through the Port of Philadelphia. If cheaper ocean freight rates and regular service could be offered through the Gulf, freight could move via barge to Pittsburgh.
3. Alcoa – Aluminum Ignots
   Currently freight is being trucked from Messina, New York to Monterrey, Mexico. Competitive rates and reliable service would be necessary to discuss barge shipping versus truck with shipper.
4. Sunoco – Plastic Pellets
   Currently shipping rails to leased rail tracks for customer convenience. Savings may be recognized if pellets were stored in containers and shipped by barge from Houston to Pittsburgh for Midwest Deliveries.
5. Ocean Shipping Companies – Empty Containers

Repositioning of empty containers that are currently delivered or will be delivered at an inland (ocean) port.

6. Freight Forwarders and Third-Party Logistic Providers – Handling COB Shipments

   They handle many smaller shippers and their responsibilities include consolidating shipments and lowering their customer's overall transportation costs. They would also be in a position to operate a barge consolidation program, if a program was initiated.

   However, several impediments to starting Less than Barge Load (LBL) and/or COB service continued to be identified:

1. There is no structured, scheduled service for the requests that are submitted. The inability to provide any service prohibits the ability to quote transit times and prevents some terminal operators and barge companies from providing quotation for hypothetical shipments.

2. Osprey Line currently operates a COB service in the Gulf; but discussions with them resulted in their rejecting any thought of permitting their barge suited for containers to come upriver to Pittsburgh because of the number of locks and the unreliability that locks introduce into the logistics chain.

3. McDonough Barge, another LBL-operator in the Gulf, was also unable to assist with any of the PPC's cargo leads due to a lack of volume. They require a minimum of 800 tons to be able to provide any type of service in and out of the Pittsburgh District.

4. Several terminals in Pittsburgh that handle heavy steel coils have the crane equipment to handle 20-foot containers but may lack spreader bars or forklifts to handle 40-foot containers. Resources would be needed to upgrade their facilities. Space is an issue since facilities would need to store both containers and chassis and handle the truck traffic that would increase. The ground must be tested to insure the heavy load capacity that the container forklift may require. The container forklifts must be capable of lifting the cargo for the most efficient operation.

5. Chassis are not readily available in the Pittsburgh area. A neutral pool of chassis equipment would need to be established, if the efficiencies of chassis are to be realized.

The conclusion drawn from these meetings was that the need and interest for a COB service exists, as do obstacles, but that they could be realized.

An update on the SmartBarge project is included in Appendix F.

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Working Group Plan

The PPC and MARAD a waterway industry and barge-service provider working group to begin to develop and implement strategies to overcome obstacles to COB. The group named itself the Inland Waterway Intermodal Cooperative Program (IWICP).

Participants of the IWICP included:

Otto Candies, III; W.E. Billy Coyle, Bilco Tools, Inc.; Lawrence Barbish, Canal Barge Co, Inc.; H. Merritt Lane III, Canal Barge Co, Inc.; Rick Cunningham, HDR Security Operations; Craig E. Philip, Ingram Barge Company; Donald McCrory, International Port of Memphis; Tom Johnson, Kirby Corporation; Sharon J. Balfour, Louisiana DOT; Gordon Angell, MARAD; Doris J. Bautch, MARAD; Robert M. Bouchard, MARAD; John Carnes, MARAD; Robert G. Goodwin, Jr., MARAD; Susan Schaefer, MARAD; Richard L. Walker, MARAD; Larry L. Brown, Mississippi DOT; Wayne Parrish, Mississippi DOT; Captain Jake Stahl, Mississippi Valley Trade/Transport Council; Richard Couch, Osprey Line; Greg Johnson, Port of Greater Baton Rouge; Steven C. Jaeger, Port of New Orleans; Ted Knight, Port of New Orleans; Gary LaGrange, Port of New Orleans; Mary Ann Bucci, Port of Pittsburgh Commission; James R. McCarville, Port of Pittsburgh Commission; Eric England, Port of Shreveport-Bossier; John W. Holt, Jr., CED, Port Shreveport Bossier; Mike Smith, SAIC; Stephen P. Bivona, SAIC; W. James Amoss, Jr., SeaPoint, LLC; Robert W. Portiss, C.E.D., Tulsa Port of Catoosa; and Thomas A. Sands, URS Corporation.

The results of these meetings, as well as informal discussion with members of the IRPT and the Transportation Research Board's Inland Waterway Committee are summarized below.

Ten-Year Vision Statement for an Inland Waterway Intermodal Transportation System:

To integrate the inland waterway system into a waterway-intermodal transportation system network to optimize the use of the waterways for efficient intermodal distribution of goods.

It should:

Link waterway interests with shippers, short-line rail, and road carriers;

1. Plan, market, and promote the waterway intermodal system and seek funding to alleviate growing congestion throughout mid-America; and,
2. Identify barriers, establish strategies, and seek funding to make this system among the most efficient waterway networks in the world.

IWICP Priorities

The IWICP group first identified 28 problem areas for the IWTS and then whittled them down to four priorities that were particularly problematic for converting our system into an intermodal network. The four priorities were:

1. Lack of knowledge in the U.S. about the successful COB operations elsewhere;
2. Lack of good data to develop waterway-intermodal marketing programs;

3. Lack of a one-stop marketing clearinghouse to provide information to potential shippers; and,
4. Lack of outreach to partner with third party logistic providers and freight forwarders.

IWICP Working Plan

While these are complex problems that will eventually require multiple strategies, the IWICP decided as first steps to:

1. Disseminate information on successful COB models and requirements.
2. Work with the U.S. DOT's Freight Analysis Framework Project to determine its utility for waterway contestable freight movements.
3. Support enhancements to the PPC's "SmartBarge" as a starting place for a common electronic marketing platform for the waterways. The PPC is willing to work with MARAD to make this an industry standard.
4. Continue discussions with COB service providers, such as Osprey Line and other intermodal logistics companies, to determine requirements to work with 3PLs and other waterway related organizations in that effort.

Characteristics of Successful COB Services

COB service is a widely used and rapidly growing means of transportation throughout the world in Europe, the Pacific Northwest and Asia. COB traffic on the Rhine grew from less than 10,000 units in 1975 to 450,000 units in 1991 and to 2,300,000 units today. COB on the Columbia Snake River System grew from 125 containers in 1975 to 50,000 in 2000. In 2000, the Yangtze River handled 605,000 TEUs and expects to handle 6,200,000 TEUs by 2010.

According to the Tisrad Research Contract with the Seed Foundation (Appendix H), published by the Arkansas Basin Development Association, undated (circa 1992), entitled "Inland Waterways and Intermodalism: Containers on the Inland Waterways - A Profile and Opportunities", IIc, page 3-4 and III-page 2, they state that:

"During an interview with Elco Freight International, Inc., it was pointed out that two things needed to be recognized up front. Container owners and ship lines are very interested in the turn around time of their equipment. That is the length of time it takes for the container to reach its destination and return to the point of origin (the deep water port). One way to negate this concern is to establish a container pool at or near the destination point for the containers after they are unloaded. Then there is a pool of containers to draw from for the local shippers wishing to ship outbound cargo.

"The second concern is the "one-way traffic" that is sometimes produced by not working both ends of the container shipping business (inbound and outbound). The container pool mentioned previously will help keep this to a minimum as long as the reverse movement of the containers is promoted, as sufficient business is developed to preclude the "one way" traffic.

"It should be noted that the containers belonging to ITEL [used in a COB project from the Port of Muskogee] were foreign made and not imported into this country as a unit with the proper duty and taxes paid. Therefore, they were registered as international containers and could not be used in domestic trade. In other words, the container would have to leave the country and return. The exception to this rule is if the container is being repositioned, cargo may be moved en route of the re-positioning."

A party interested in promoting domestic transportation via containers needs to be aware if the container used is international, part of an international movement, has its duties paid, or, conversely, if it is a domestic container, if it has the appropriate slots and pins standard in the international movement. (This is important because of the handling requirements for the port of embarkation and disembarkation.)

The exception noted above for repositioning containers is an important one. Front Royal, VA, is an inland depot for the Port of Norfolk. In the earliest years of its operations, it attracted primarily empty containers moving back to an ocean port and then back overseas. Eventually shippers learned that they could move cargo in these otherwise empty containers. As a result, the community of Front Royal has had numerous companies locate consolidation and distribution facilities there.

In the past, COB service has been tried and found wanting on the Mississippi River System (MRS), the Ohio River System (ORS), and the Gulf Intracoastal Waterway (GIWW). Recently, a new service coming out of Houston has overcome obstacles long considered insurmountable for the GIWW and is even starting to move up the Lower Mississippi River System (LMRS). This has encouraged new thinking about expanding COB service up the Mississippi and Ohio Rivers.

Successful COB operations are not only successful towing operations, but they are successful logistical operations that combine transportation modes promoting COB in an integrated way. They include: the Rhine River System, the Columbia Snake River System and Osprey Line from the GIWW and finally the Danube River System. The first three of these key their activity off of overseas traffic that comes into a gateway port or ports.

Successful systems include: efficient, cost-effective terminal operations; efficient and reliable barge sailing and delivery schedules; effective container/chassis equipment control and repair systems; security, insurance and risk control systems; sophisticated communications systems and extensive preparatory marketing.

Obstacles to Starting a COB Service

In order to plan for COB service, however, it is important to understand the history of why it has not worked in the past and how shippers and service providers perceive it now. In addition to the review of the Pittsburgh Barge Shippers' Council, the Monterrey, Mexico Barge Shippers' Council, the IWICP and the MTSNAC-IWIT, many of the same criticisms were described in previous studies. The comments from those studies as well as the focus groups are brought

together here to give the potential service provider a more complete picture of the challenges and opportunities that a service provider for COB for the U.S. inland river system.

Obstacles to starting a COB service are more economic than technical. Perhaps it would be even more accurate to say that the obstacles are more business practices than business costs. Starting a COB service where a traditional bulk barge operation exists presents a classical "chicken and egg" dilemma. Carriers say that if there is a demand, they will provide the service. Shippers say that if there were a service they would use it. There is a role for the public sector to move both the chicken and the egg as close to each other as possible.

Terminal Requirements

Most river terminals accustomed to loading steel coils could be readily adapted to handling containers with modest modifications and appropriate expertise. Several terminals already exist in the Pittsburgh area with the capability to handle steel coils. One Pittsburgh river terminal currently transfers containers from truck to railcar.

In order to be cost efficient, a terminal requires sufficient space to store the containers, a 20-30 ton overhead crane or a mobile crane, spreader bars for 20 and 40 foot containers, a 20-30 ton container forklift and ground strength sufficient to support the concentrated wheel points of the forklift carrying a loaded container. Know-how in working and stowing containers is essential. Major inland river terminal construction is not necessary to initiate COB service.

Ground Storage. A terminal is typically required to provide 2.5 times the ground storage to work a vessel. Given that a barge can load 72 TEUs, a terminal would need space for 176 TEUs per the number of barge that it intends to work. Initially, this could be as little as one barge. The ground strength must be sufficient to support the tire points of contact to support the container and forklift as it moves between storage and the dock. (Using trucks for this may be acceptable on a trial basis but it is not efficient for continued use.)

Cranes. A 20-ton crane would be able to lift most highway-weight containers, but a 30-ton crane would handle most overweight containers. Mobile cranes have reduced the start up costs for a terminal entering this market. The Port of Brownsville recently upgraded its steel handling equipment with a crane and spreader bar. Pictures of the Brownsville COB operations are attached in Appendix G.

Container Forklift. Container forklifts are more efficient for moving the containers within the port terminal. A container forklift could be placed in the barge and moved from terminal to terminal, but that cuts down on revenue-earning space inside the barge.

Intermodal Connections. The terminal must have good connections to the intermodal highway network, with adequate signage and turning radii to enter the facility. The terminal should have a weigh station where the container inspections can take place and the responsibility for any damage can be documented.

Weight Limits. Most states limit the weight of truck pulling a container to 80,000 pounds. This translates to a 20-25 ton container maximum, unless the container is stuffed at the terminal or the container is under some exemption. Some states, such as Pennsylvania, do have exemptions for steel and export cargo, but the Bill of Lading needs to show a foreign delivery destination, not

transfer at the border. Texas allows a specific exemption for international cargo moving from the Port of Brownsville over special roads for the eight miles to enter Mexico. This gives inland river ports a competitive advantage on overweight cargo moving in containers stuffed on the dock.

The containers themselves are extremely strong. The California State Highway patrol once reported stopping a TEU weighing 58 tons. While this is the exception, it allows the shipper of dense cargo the opportunity to move as much as twice the cargo for the same price. Some, if not most cargo however, cubes-out (uses all of the space) before it weighs out

Barge Operations

Typically the COB business on the Rhine River System operates with self-propelled barges (sometimes owner-operated) often stacked three high (with an air clearance of 6.7 to 7.0 meters). Operators there confirmed that they calculate a break-even load at 2/3rds full. This allows the operators to make a profit with any additional cargo, beyond 2/3rds and to cover their losses when they must sail with less to keep a schedule.

Typical cargo imbalance mix includes 10% empties downriver and as much as 65% empties upriver. Tows can operate at relatively higher speeds on the Columbia Snake River System. The same was observed on the Rhine River System.

The Rhine River System COB started with two barges with a capacity of 50 and 60 TEUs. To demonstrate their commitment to reliability, the owners committed to regularly scheduled service even if that meant sailing with only two or three containers on board. From the start they integrated the COB service into the intermodal logistic chain with the ocean-going carriers.

The highly successful Rhine River System and Columbia Snake River System share common attributes of high productivity, relatively high tow speeds, competitive rates, availability of reliable, scheduled service, length of hauls of 250-500 miles, relatively quick transit times, scheduled service on frequent barges, heavy orientation to export traffic and door-to-door pricing, transparent to shippers, to eliminate the potential for hidden charges.

Osprey Line uses deck barges and will only stack them two high due to wind concerns in the South Texas Gulf area.

A jumbo river barge, however, can carry 24 TEUs of containers, stacked 3 high, for 72 TEUs per barge. As the name implies, this could be 72 twenty-foot containers or 36 forty-foot container equivalent units, or some combination thereof. This is shown in Appendix H.

Stowage, Multiple Stops, Express Service

Vessels with containers require stowage plans for stability of the vessel. The stowage plans aid the receiving port in its unloading plan. Every time a vessel stops to pick up additional containers, a new stowage plan must be made. This sometimes requires unloading and reloading previously loaded containers to re-stabilize the vessel.

Thus, a single barge should be loaded at one port to be delivered to one port (port-pairs). Exceptions can be made, but only at the expense of scheduling and possibly, double handling of

cargo.

This means that a successful port should invest in marketing efforts to eventually guarantee a full barge load for each destination port it seeks to serve. Demonstration or trial services, however, may not have this luxury. In that case, additional stops may be required.

A notable exception could result from some carriers' reluctance to move containers stacked three-high in the lower Gulf Intracoastal area. Until those concerns are resolved, the third-high stack from the inland rivers could be removed at a port such as Houston or New Orleans.

Container/Chassis Management System

The container/chassis management system requires a supply of containers/chassis, a container inspection reporting system on the condition for the containers at transfer points, and maintenance of the equipment supply, since the ocean carrier in the COB operation can simplify the container equipment supply, since the ocean carrier already delivers large volumes of equipment to the ocean ports. If an equipment supplier is not easily available, the inland port may be required to set up the neutral pool itself.

Depending upon the ship line, inland pools are already established in Memphis, St. Louis, Chicago, Nashville, Columbus and Cleveland. In Pittsburgh, for instance, Hapag Lloyd has a pool, but not all of the lines do the same. The expense for establishing a pool will have to be born or shared by the shipper, the steamship or barge line, or a logistics company or port.

Reducing Time at Lock and Dams

The locks and dams create a significant problem for the Pittsburgh District. Any freight shipment moving to and from Pittsburgh needs to navigate through more locks and dams than any other inland port. Three of the locks approaching Pittsburgh are the smallest and oldest on the 981-mile length of the Ohio between the Point in downtown Pittsburgh and the Mississippi River. Small locks cause double locking, backing up traffic and raising shipping costs of $200-$300 per hour for the towboat and even more for the cargo.

Osprey Line has specifically indicated that river systems with locks and dams, such as the Ohio River System, introduce too many variables to keeping a regular schedule. For Osprey to enter the Ohio River arrangements would need to give locking priority to container vessels and better manage lock closures so as to not penalize the high value cargo the line expects to carry. While lock preferences are given to passenger and government vessels, but no preferences are currently granted for vessels carrying different kinds of cargo. Such preference may require negotiations with the rest of the barge carrier industry.

The lock problem is not just the time required to lock through, but also the unreliability of aging locks and their lack of preventive maintenance. According to the USACE, the amount of unscheduled lock maintenance outages has doubled in the past ten years.

Express tow services, operating with few barges, could utilize the small lock chambers and save as much as a week off the transit from Pittsburgh to the lower Gulf. This model is used by many

of the liquid barge towing companies, such as Kirby Corporation.

Eliminating the Fee for Double Handling

A problem with the development of COB trade is often the fee for double handling at the ocean ports. All traffic is double handled at an ocean port. If it comes in by ocean vessel, then it must go out by truck, rail or barge. But the fees for the second handling by barge are priced similar to the cost of handling the ocean vessel instead of the much less expensive fee for handling trucks or rail cars. While actual costs may vary, the practice of charging domestic and overseas marine fees the same may be driven as much by tradition as actual costs.

Positive exceptions can be found in the examples of the Rhine River System and the Columbia Snake River System, where COB pricing is integrated with ocean costs as a total logistics package and competitive with truck and rail.

Where they have priced barge handling competitive to the truck handling, COB becomes competitive, as it has in Portland. This intermodal pricing is attractive to shippers on a new system, because it removes the dangers of hidden costs and gives the shipper a price he can compare with other routes. This fee, however, may be tied to union contracts at the ocean port. Addressing the issue as a port competitive factor, involving all parties, could make the ocean port more competitive as well as opening up the inland traffic.

Alternatives to Double Handling Fees

The seriousness of the double handling fee, as well as port congestion, has generated two alternative proposals. One proposal, SeaPointe, would build an automated mid-stream COB transfer facility below New Orleans. In that instance, a mid-stream crane would transfer the goods directly from ocean vessel to inland barge. Another proposal, SeaWorthy, would be to cut single hull liquid carriers into a modified Lash container mother ship for regular river barges. In this case the cargo would remain inside the river barges as the entire river barge becomes lashed onto the mother ship. These scenarios may well be also exempt from the Harbor Maintenance Tax, which could become an additional advantage for the COB movement.

Jones Act, U.S. Coast Guard Manning Restrictions and Duties on Containers

Any party starting a COB service needs to be aware of the special requirements of the Jones Act and U.S. Coast Guard manning requirements. The Jones Act requires that vessels in the domestic trade be built in the U.S. Operators and potential operators allege that cheaper and more efficient vessels (using few crew members) could be built overseas. Inland boat builders contest the claim that they are more expensive, but they do not have a history of building such vessels. A detailed study needs to be done on the issue, but it is beyond the scope of this work.

An operator of a domestic COB service also must be aware of the requirement that the container itself be built in the U.S. or be imported into the U.S. with duties paid. A notable exception to this is in the repositioning of containers that allows for the movement of domestic cargo as long as it is part of a repositioning for an international move.

Cooperative Marketing

A marketing feasibility study can reduce the risk of any COB service. It can help estimate the size of the market, so appropriate resources may be applied to it, and it helps target and sell the system and make it profitable. ***Ideally, the study should be done for the entire system.***

Whether all of the inland ports participate in the initial phases of the marketing analysis, selling the concept needs to be a cooperative effort of not only the inland river ports, but the ports of New Orleans and Houston as well, and possibly the states of the inland system.

Ocean ports have an advantage in trying to size, target and sell to their market. The U.S. Customs Office collects data on all imports and exports, including shipper, consignee, ports used, origins, destinations, commodities, volumes and frequencies. The Port Import Export Report (PIER) data is a private service that collates and makes this data available in an easily understandable format for ocean ports. While the service is somewhat costly and does have limits (i.e. some shippers are identified only as "order", other have the origin listed variously as the place of manufacture, headquarters or of a brokers place where the data was entered), it is at least a common starting place.

While the PIER's data (based on U.S. Customs entries at deepwater ports) is useful to analyze international movements, it is not useful to analyze domestic movements or even international truck crossings into Mexico at Laredo, Texas and other border cities. For inland ports to analyze the domestic and Mexican truck and rail traffic, they should either review the raw U.S. Customs entries for Laredo or acquire private domestic databases. In either case they should also conduct the appropriate follow-up interviews with shippers. If the expense of these methods is out of the reach for an individual port, they should consider a cooperative market research effort or utilize the other research methods listed in this report.

Selling a New Transportation Concept

Selling a new concept is more difficult than selling an existing service. Shipping agents are under tremendous pressures to make decisions about what must take place next week or next month. Few have the time to worry about a new service that might or might not be offered a year from now. A concept-selling job must not only target traditional agents, but corporate decision-makers as well. And if a change in delivery time is required, the corporate person may also have to be able to sell their production department as well. So the deal to be sold has to be very good.

Selling a new U.S.-Mexican service is even more complicated in that the control of the transportation of the U.S.-Mexican traffic is traditionally transferred at the border. The fact that both shipper and consignee have transportation routing responsibilities and shipping agents and corporate officials on both sides of the border must be sold on a new service.

Selling a new transportation service must overcome not only competitive factors, but also the five simple shipping clerk syndromes:

1. I always did it this way. If I change, make it easy to do so;
2. I don't always have to be fast, but I have to get it there on time;

3. Tell me what service is available next week, not what might be next year;
4. I want to save money, but not expose the cargo or myself to risk;
5. All things being equal, I would like to keep an alternative routing open or develop an alternate route.

That means the sales job for the system must be strategic, sophisticated and targeted to specific corporate management, as well as the shipping clerks and freight forwarders.

Promoting the Cheapest Way

Barging is cheaper. The one-cent barging per ton-mile costs still compares favorably to the 3 cents per rail ton-mile or the 5 cents per long haul trucking ton-mile. The average point-to-point cost of barging, with intermodal drayage, may still be as much as half that of railroads and a third of trucking, but the drayage distances must be small or otherwise non-competitive to accommodate the additional handling. This moderates the barge advantage and even eliminates it in some markets, defining in part the geography of where COB can compete and where the barging advantage is greatest.

Still, transportation is only a small percent of the cost of manufacturing. Therefore, other factors may be as important to the manufacturer. The COB provider must also take into account the shippers' carrying cost for a slower delivery and the potential extra cost if the delayed shipment impacts on the manufacturing schedule.

A pro-active shipper may realize the benefits of changing the supply chain to capture the transportation benefits, as was the case of US Steel's entry into the Mexican market. But this conversion process included a change in production schedule and has been limited to far-thinking companies.

Keeping a Competitive Routing Open

Barging is part of an intermodal system that requires the movement of cargo to and from the river system by truck or rail. It is only logical that all three modes work to maximize the total freight efficiency while seeking to maximize their own market share. Intermodal cooperation between trucks and rails has been very effective. Still there are times when the modes will compete for the longest part of the intermodal move.

Barging where it is available, provides the shippers with tremendous advantages. Not only is barging cheaper, but rail carriers will counter by also reducing their rates to the benefit of the shippers of the region. These barge-compelled rates bring economic advantages to all shippers of that good in that region, whether they use water or not. Therefore, regions have an interest in fostering a COB service, but the service must be sustainable.

If rail carriers temporarily undercut COB to win the business back, it often results in the COB ceasing operations and allowing the competing modes to raise prices again. Therefore shippers do have a vested interest in supporting COB. The danger is that in many cases the competitive mode may drop its price to get the business back. This happened time and again to COB services on the Mississippi River in the 70s and 80s.

COB service providers must anticipate that competing modes will retaliate in price competition. The Port of Brownsville, for instance reports that Union Pacific had threatened to charge a higher price for the port's rail cargo that comes into the port via barge than for the same cargo that comes in via ocean carrier.

Ease of Doing Business

The Barge Shippers' Councils and IWICP working group indicated "ease of doing business" as a priority issue.

As part of its response, the PPC is developing an E-Commerce website <www.smartbarge.com> to provide an estimated intermodal cost to and from multiple locations on the inland river system and its logical intermodal connectors. The site, previously available only to or from Pittsburgh as a trial tool, has been adapted for the purpose of becoming an industry standard. Please see Appendix F for a copy of the SmartBarge homepage. It shows how a potential shipper can enter his data and instantaneously receives an intermodal rate comparison.

Timeliness

The need to get a shipment on time is absolutely critical in today's market. This does not require that the shipper choose the fastest way, as long as the delivery time is known and reliable. Many COB markets can compete with other modes, but if delivery does take longer, then the production cycle must be timed appropriately.

Osprey Lines has indicated that when a ship discharges a load of containers in Houston, barging 50% of the time, is able to beat the time it takes to line up 72 trucks and drivers, clear the port congestion at Houston and deliver to destinations within 200 miles. Some Pittsburgh shippers contend that a 30-day barging time to Brownsville, Texas is not always uncompetitive with the circuitous railroad routing that it sometimes takes to get there. The railroads are, however, getting aggressive in marketing intermodal service for the Mexican destined freight.

Most barge lines rely upon fleeting and transfer services that add days to a voyage. However, express services similar to some liquid carriers, can cut those days off of the delivery. Express services in smaller tows can often take advantage of locking through smaller chambers, when available, bypassing some of the congestion that may be waiting at the larger chamber.

Inventory Cost

If barging adds to the delivery time, this needs to be calculated for the shipper. While each shipper or commodity may have its own way of calculating this cost, a rule of thumb can be used that it takes the value of goods times 1-2% per month to carry the extra time. Of course if the goods are perishable or very valuable, then they may not be suitable for barging at all.

Even this, however, can be turned to the advantage of barging in certain circumstances. Intermodal Logistics Group's John Pearson, who has been actively marketing COB to Mexico, has found that many shippers respond favorably to the "warehousing-in-transit" concept. In fact, some cargoes have such low value, such as wastepaper, that they cannot afford the cost of storing them in warehouses.

Volume

Finding a single shipper with sufficient volume and control would be the easiest way for a carrier to enter the COB market. In fact, several attempts in the 1970s and 1980s were able to succeed for some time on this basis. However, the carrier only supplied enough equipment for that shipper and when the market conditions changed, or if the railroads undercut them, then the business disappeared.

Finding a few large shippers would be more a desirable strategy. However, in either case, the carrier should probably price a breakeven point at about 2/3rds of the captive cargo and market the excess capacity to other shippers.

Next Steps

The industry needs to demonstrate the potential for such an operation to solve the "chicken and egg syndrome." The next section details how the PPC analyzed the potential market coming out of Mexico for an LBL or COB service, and sets a model as to how other inland U.S. ports could analyze their own markets.

Task 2(B): Mexican Market Case Study

The PPC will retain a consultant to research the Brownsville-Monterrey market, identify the potential leads of additional users to the waterways, interface with the Port of Pittsburgh staff to develop those leads, represent the Port of Pittsburgh and the inland waterway system capabilities, document the key shippers and the advantages/disadvantages they perceive to entering international IWTS transportation to/from Mexico, help develop Spanish language marketing materials and facilitate activities indicated in Task 3.

Mexican Marketing Consultant

The PPC, through a cooperative contract with the Commonwealth of Pennsylvania retained the services of Procorfi S.C. in Mexico City and Investra Consultores, S. C. in Monterrey, Mexico, on August 2001.

Investra has since interviewed 71 companies in the Monterrey area. They identified six companies currently barging between Monterrey-Brownsville and 38 companies with existing potential cargo (2547 truck loads) to/from destinations consistent with inland waterway transportation capabilities. Grouped in market areas, they fell in three major target groups. (Group I) IL-IN-MI = 300 TL. (Group II) AR-OK = 325 TL. (Group III) PA-WV-OH-NY-NJ-RI-Ontario = 1333 Truck Loads. This is a very large number of shippers identified with barging potential. There is some caution with this data in that a few shippers grouped multiple destinations that may or may not all be river serviceable.

Why Monterrey, Mexico as a Barging Target

Not everyone is aware that one can ship a barge load of goods from Pittsburgh, Chicago, and St. Paul or St Louis down the tributaries, the Mississippi River and the Gulf Intracoastal Waterway (GICW) to Brownsville, Texas, a literal stones' throw into a very important and growing

manufacturing market of Mexico. That lack of knowledge is often prevalent on both sides of the border. Informing the shipping public about this opportunity is becoming increasingly important as the post-NAFTA Mexico replaces Asia as the source for many goods and as west coast ports and southern highways become increasingly congested.

Monterrey (located in the northeastern Mexican state of Nuevo Leon and only a few truck hours from the Port of Brownsville, Texas) is the commercial center for Mexico. Half of the country's top 20 companies are located in Monterrey. Monterrey is sometimes called the "Pittsburgh of Mexico" with similar key industries of steel, chemicals, plastics, glass, and petrochemical industries. Monterrey is only an hour's drive to Saltillo, the automotive center, or the "Detroit of Mexico". Between Monterrey and Brownsville (just over the border from Brownsville) is the Mexican city of Matamoras, a furniture and "maquiladora" center. (Maquiladoras are the largely U.S. owned companies manufacturing parts or finished goods for export back into the U.S.). These industries all produce commodities that are highly suitable for barging and the integration of these North American industries leads increasingly to the integration of the supply chain between these locations. Monterrey serves as an extremely logical base for expanding U.S. waterway transportation markets into Mexico. U.S. railroads have not traditionally marketed movements to the NE U.S. that would require the participation of two or more U.S. railroads splitting revenues. Barging could be an attractive alternative for these shippers who may not yet even be in the NE Mexico to NE U.S. trade.

In addition to the region specific industries cited above, Mexico in general is a good target for the type of cargoes that move by barge. According to the Journal of Commerce, Mexico is becoming a choice destination for recovered materials…. NAFTA eliminated the tariffs on most waste shipments and…Wastepaper, beverage-container glass, scrap metals and plastics are among items that Mexican industries cannot get enough of these days. Wastepaper is very sensitive to a $1.00 difference in freight rates and some American aluminum cans are coming back as recycled automobile parts. Strategic Materials, Inc., of Houston, arranges for the Monterrey glass company, Vitro, to receive 1000 tons of recycled glass a month. Another 500 tons goes to Fabrica de Envasa de Vidrio, S.A. While generally the profit margins on recycled glass are so thin that it rarely pays to transport the material to end users more than 150 miles away, steep Mexican electricity costs make it cheaper for Vitro and Fabrica to make bottles from recycled glass instead of from raw materials. The glass "goes down as Miller and comes back as Corona" said one supplier.

Mexican Market Analysis Summary

According to information provided by Intermodal Logistics Group, among all of the 1998 commodities trucked from Mexico to the U.S., 66% fall in the waterway contestable 2-digit Bureau of Transportation Commodity Codes, including: electrical machinery, 31%; vehicles, 17%; nuclear reactors, boilers, machinery and mechanical appliances, 13%; furniture, 3%; and iron and steel, 1.4%.

Among commodities trucked from the U.S. to Mexico, 62% fall in the waterway contestable 2-digit codes, including: electrical machinery, equipment and parts, 25%; nuclear reactors, boiler, machinery and mechanical appliances, 13%; vehicles, 11%; plastics, 7%; paper, paperboard and pulp articles, 3%; and iron and steel, 3%.

Waterway Contestable Cargoes			
BTS Commodity Codes	**Among the Top Commodities Trucked From Mexico to the United States**	**$ Million**	**%**
85	Electrical Machinery, Equipment and Parts	24,876	31%
87	Vehicles	13,546	17%
84	Nuclear Reactors, Boilers, Machinery and Mechanical Appliances	10,727	13%
94	Furniture, Bedding, Mattress Supports, Etc.	2,679	3%
73	Iron and Steel	1,149	1.5%
Total of all Commodities		**80,569**	
Percentage Waterway Contestable			**66%**

BTS Commodity Codes	**Among the Top Commodities Trucked From United States to Mexico**	**$ Million**	**%**
85	Electrical Machinery, Equipment and Parts		25%
84	Nuclear Reactors, Boilers, Machinery and Mechanical Appliances		13%
87	Vehicles		11%
39	Plastics		7%
48	Paper, Paperboard and Pulp Articles		3%
73	Iron and Steel		3%
Total of all Commodities		**69,360**	

Percentage Waterway Contestable		**62%**

Source: 1998 BTS, US DOT and ILG

Despite their market sophistication, Monterrey shippers had very little knowledge about the inland waterway system before the activities described below were undertaken. In addition, the Mexican shippers have a different business model, stressing personal and long-term relationships. These factors provided challenges for this project.

The interviews conducted by the consultants prioritized three U.S. nodes with the greatest chance of developing inland waterway COB markets to/from shippers in Monterrey those nodes are concentrated around: (a) the Oklahoma-Arkansas Waterways node (b) the Illinois-Indiana-Western Kentucky node (c) the Pennsylvania-New York-Ontario Eastern Ohio node. On a monthly basis, shippers estimate that the following volumes of truckload traffic between Monterrey, Mexico and the above listed nodes are (a) 1,333 (b) 300 and (c) 325, especially in steel, chemicals, and plastics. While specific leads have been developed, they are being treated as confidential transactions. Please see Appendix I for a listing of Mexican companies and commodities with a possible interest in this project.

Task 3: Establish a Mexican Barge Shippers' Council in Monterrey, Mexico.

The PPC will form and host a Mexican Barge Shippers' Council meeting (less formal than the PA council), meet with previously screened potential shippers to discuss impediments to greater waterway usage and devise strategies to increase IWTS commerce. It is anticipated that the Mexican Barge Shippers' Council would eventually expand to cover issues in all IWTS ports and waterways.

Groundwork

Groundwork for the Monterrey, Mexico Barge Shippers' Council (MMBSC) took shape over a period of years. The PPC began visiting Monterrey in 1997. Recognizing the lack of waterway awareness, in 1998 a PPC trade mission took 17 PA manufacturers to meet with clients and representatives in Monterrey. While only 2 of those 17 were waterway-oriented companies, the mission helped establish credibility of our interest in their markets. In the second visit, in 1998, Pennsylvania Governor Ridge met with Nuevo Leon (NL) Governor Canales while the PPC signed a "Sister-Port Agreement" with the NL Department of Economic Development and the NL Chamber of Exporters. During the same period, the PPC began to co-host "Rivers of Commerce" trade receptions with the Port of Brownsville, Texas, an event that had previously been oriented toward Brownsville's ocean shippers.

Invitation to participate in the annual Rivers of Commerce event has now been extended to all inland ports, at which time they have the opportunity to call on Monterrey shippers in an organized manner. Several inland ports however, remarked about the difficulty in maintaining business contacts with only one visit per year.

Monterrey Barge Marketing Consultant

As part of the response to the need for continuing presence, the project retained a consultant in Monterrey to interview companies on a regular basis, determine the waterway contestable cargo

potential, identify the proper companies and individuals within those companies to be invited to participate in the MMBSC and to act as host for the activities of the MMBSC, at which the PPC also participates. Although many company executives in Monterrey speak English, the consultant also translated material and for PPC officials, as necessary. A list of companies interviewed can be found in the Appendix J.

Monterrey, Mexico Barge Shipping Council (MMBSC)

The MMBSC is structured with two ties. The larger group, or affiliates, is open to all identified potential barge shippers in Monterrey. The methods to reach them include direct mailings and an annual reception (sponsored by the Port of Brownsville).

The membership of the MMBSC itself is targeted to experienced barge shippers (75%) and those with good knowledge of the waterway and with the very high likelihood of becoming a barge shipper. They were identified as high-volume shippers of low to medium value dense cargo, with knowledge of the waterway system.

The MMBSC members identified a number of obstacles to developing increased barge business. Generally the MMBSC shipper cited problems similar to those already mentioned. The obstacles identified were:

1. Lack of knowledge about the advantages of the IWTS;
2. Lack of familiarity with the people engaged in performing IWTS services;
3. Requirements to contact too many people in order to arrange barging; and,
4. Requirements to amass 72-TEUs to take advantage of barge economies of scale.

Obstacles identified unique for the MMBSC, include:

1. Difference in language;
2. Differences in business culture and value of long term business relationships;
3. The pre-NAFTA orientation of Mexican exporters (other than the "Maquiladoras") to focus their export attention on lesser developed markets;
4. The tradition of both U.S. and Mexican Freight Forwarders to exchange all cargo documentation responsibility at the border, which requires twice as many parties to make a change in the transportation means; and,
5. The lack of a domestic inland waterway system in Mexico to provide familiar comparison.

In meetings with MMBSC affiliates not familiar with IWTS, US Steel speakers explained how they changed their production schedule and inventory control systems to create a just-in-time pipeline to feed what is now $75 million worth of sales of U.S.-made steel into Mexico. ACBL then explained the barging system while the ports of Brownsville and Pittsburgh, and their terminal operators, explained their respective roles.

US Steel was followed by Mexican companies of Hylsa and AHMSA who explained how they watched US Steel's success and, in their own ways were able to use barging to open up new markets in the U.S. We estimate the Mexican based waterway exports to be about $25 million a year into the Pittsburgh region alone. This is currently about a 3:1 favorable balance of trade for the U.S.

The benefits that we determined would induce their participation include:

1. Participation in three events each year, without cost, in Monterrey; to meet representatives of barge companies, ports, carriers, terminals, stevedores and outside speakers;
2. Information on the reduction of transportation costs by exploring barge cargo consolidation; development of supply chain economies of scale; development of new transportation networks; competitive routing advantages over Asian suppliers targeting the same U.S. markets; development of market intelligence and networking with market participants;
3. Use of PPC offices when visiting Pittsburgh to meet with their clients; and,
4. Invitation to attend the Pittsburgh Traffic Club's Annual Black Tie Dinner.

(The participants in the MMBSC can be found in the Appendix K.)

Future Actions

Demonstration Project

The maximum cost for a six-month demonstration, with two barges running from Pittsburgh to Brownsville, is estimated at $360,000.

Research

Encouraged by the results of this study, the PPC intends to pursue an extensive and detailed market study, including professional consultants and proprietary databases.

Most river ports, however, are small operations that may not be able to afford access to such databases. By using the 2-digit Standard Transportation Commodity Codes (STCC) or their Standard Industrial Code (SIC) equivalents, interested ports could identify potential hinterland clients in a 50-250 mile radius and prioritize the potential customers through the Harris Industrial Manufacturing Guide or state industrial directories. Companies with operations of greater than $25 million in sales or 250 employees would make higher priority potential customers. This

information can then be correlated with the U.S. DOT's state-to-state database for commodity flows between states adjacent to the inland river system and their particular port or other studies to identify the highest-level, priority targets. A port interested in hosting a COB service can take this type of information to target sales calls to determine the level of industry interest.

An Intermodal, Logistical and Entrepreneurial Organization Model

The organizing entity must have an intermodal, logistical and entrepreneurial mentality. It may be an existing barge line or terminal, but it could also be an outside logistics company that approaches the problem from an end-to-end seamless perspective.

Funding

Great Britain and the European Union provide incentives for operators to upgrade to less polluting towing equipment and to implement other improvements to take cargo off of the highways and to put it on the inland waterways. Currently there are no such federal programs specifically designed to facilitate COB business in the U.S. A further evaluation of the European model could be useful for COB development in the U.S. In the reauthorization of TEA-21 and other new funding sources, it has been suggested that projects along these lines might be eligible under the Congestion Mitigation and Air Quality (CMAQ) provisions.