

# THE MARIPORT GROUP LTD.

## REPRESENTATIVE PROJECTS IN TUG AND BARGE SYSTEMS

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### **Application of Tug/Barge Systems to Grain Handling in South Australia**

On behalf of South Australia Co-operative Bulk Handling, undertook a feasibility study of the application of self-unloading tug/barge equipment for grain transshipment and lighterage in South Australia.

### **Barge Inspection and Valuation**

On behalf of a major Canadian cement producer, inspected and placed market and replacement values on a self-unloading cement barge. The barge later changed hands at the value placed upon it.

### **Analysis of River and Deep Sea Shipping Alternatives**

Reviewed logistics and costs for shipment of calcined Bauxite from Linmine, Guyana, to international markets. Linmine is about 60 miles up the Demerara River which is shallow and essentially unimproved. A tug/barge tow was determined as an economic delivery system to the transfer station in Georgetown.

### **Cement Barge Advisory Services**

Undertook feasibility studies for the movement of cement on the Great Lakes. This resulted in new self-unloading cement barge operations. The work included:

- Economic analyses of the proposed operations
- Equipment pricing and shipyard selection
- Tendering for both barge construction, and towage and management services
- Monitoring of one operation during construction and after delivery
- Review of TBU's acquired for conversion, and evaluation of conversion proposal
- Handling of TBU registration, delivery and trading for 15 months before delivery of unit for conversion.
- Operational overview of the tug/barge fleet to identify opportunities for increased productivity

Work has resulted in 6,000, 9,000 and 17,000 dwt TBU's being introduced.

### **Forest Products Barging: West Africa - Mediterranean<sup>1</sup>**

On behalf of an Italian shipping company, developed a transportation system for pulpwood from an undeveloped West African River port to Italy to overcome major loading delays with conventional ships.

### **New Providence Island Shipping**

Mariport principals were involved over a 20-year period with the Bahamas Water and Sewerage Corporation relative to the provision of water transportation services on a shuttle basis between Andros and New Providence. This system has used a mix of conventional tugs and barges, powered barges and small tankers.

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<sup>1</sup> Undertaken by Mariport principals prior to company formation.

### **Conceptual Outline of Tug/Barge Systems**

Provided an overview of capital and operating costs for a wide range of conventional, shallow draft and self-unloading tug/barge systems for Great Lakes salt movements.

### **Alaskan Barge Services**

As part of an overview of transportation services in South East Alaska, reviewed the service characteristics, costs and pricing of barge service between Seattle and South East Alaska communities.

### **Aguathuna Quarry**

On behalf of a promoter seeking to reopen a specialized quarry in Newfoundland, undertook a shipping and port study to identify the lowest costs delivery options. Low cost option was a self-unloading tug/barge system.

### **Tug/Barge Market Opportunities**

For a Great Lakes operator, reviewed regional trades and characteristics, identifying opportunities for future growth. Provided an overview of the existing fleet and identified sale/conversion/acquisition options to meet market needs.

## **EXPERTISE IN TUG AND BARGE SYSTEMS**

Tug and barge transportation can offer significant benefits to the shipper, but only if size, connection system, tug power and service characteristics are fully understood. A key element in determining the feasibility of a tug/barge operation relative to a conventional service is the sea conditions that will be encountered. This impacts the speed and safety of the combination and thus the overall system economics.

Tug/Barge systems generally fall into one of three categories. Each has specific capabilities and applications in competition with conventional powered vessels.

- 1<sup>st</sup> Generation – Barge is towed over 90% of the time and may have a vestigial notch for pushing in harbours and sheltered waters.
- 2<sup>nd</sup> Generation – Deep notch, designed to enable push towing to be achieved in excess of 70% of operating hours.
- 3<sup>rd</sup> Generation – Rigid or articulated linkage between tug and barge, permitting almost 100% push towing.

While barges offer significant benefits with regard to cargo capacity on limited draft, economic navigation speed can be a major draw back if long hauls are contemplated. Thus, a system needs careful evaluation to ensure commercial viability.

Mariport's principals have had considerable experience with first, second and third generation systems, and different linkage arrangements. They are, therefore, able to suggest the most appropriate combination for any potential operation, its capital and operating costs, and how it compares with a conventional ship.

Professional papers on tug/barge systems are available, see Presentations, Papers and Articles