



# Shipping & Logistics in China

Yangtze River Delta Outlook 2004  
Commercial Cargo Transportation on  
Inland Waterway Systems

David Wignall

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## Yangtze River Delta Outlook 2004

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### The Questions –

- What transport functions do inland waterways provide for communities and for commercial traffic?
- What factors encourage the development of commercial cargo on inland waterways?
- What can history tell us about the importance of the Yangtze River to the development of China?
- What can other great commercial rivers of the world teach us about the development of commercial cargo on the Yangtze River?

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### Why are inland waterways attractive?

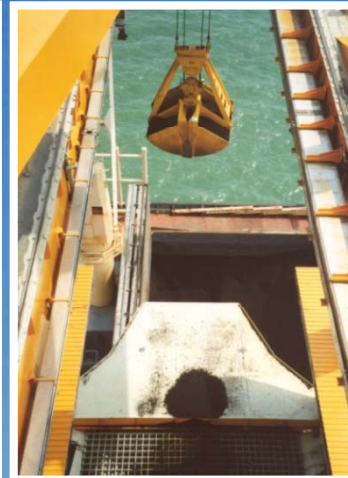
- Initial development cost low
- Fuel and labour efficiency:
  - 1 truck t-km = 4 rail t-km = 10 waterway t-km
- Security
- Flexibility

### and the downside?

- Cargo re-handling
- System speed

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### Major Commercial River Networks

- The Mississippi
- The Rhine
- Other Networks

### Compared and contrasted with

- The Yangtze River and its Delta

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### The Yangtze

- Navigable at least 2,000 km inland to Chongqing
- Three main sections:
  - lower – Yangtze Bar to Nanjing (approx. 325 km)
  - middle – Nanjing to Wuhan (approx. 600 km)
  - upper – Above Wuhan (approx. 1,000km)
- Barge and tug types have evolved
- Regulation not consistent

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### The Yangtze – A Historic View

- The Golden thread of Chinese civilization
- Late 19th early 20th Century:
  - Wuhan one of largest ports in China
  - Wuhan the crossroads of inland China
  - Closed to Foreign Trade in 1947
  - Re-opened to Foreign Trade in 1990's
- Now focused on large bulk volume flows:
  - Coal, iron ore
  - Nascent container trade – approx. 110,000 TEU through Wuhan in 2003



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### The Yangtze – A Commercial View

- Limited competition:
  - COSCO, Sinotrans and dedicated fleets dominant
  - rail inefficient in time and capability
  - road not realistic option (yet)
- Rail transport rates destroy profits
- Security and reliability of transit

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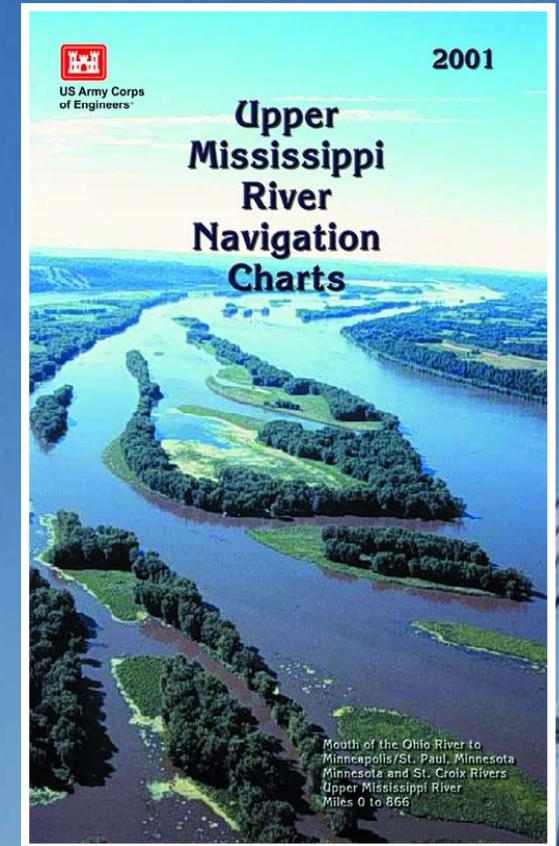
- Security and reliability of transit
- Huge potential that is not realized
- Developments to improve service levels in hand
  - Fleet expansion and independent operators WAMT
  - More competition, international operators?

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### The Mississippi

- 10,000 km of Navigable Water
- Cargo volume: 400,000,000 t
- Open bulk, Covered bulk and Liquid bulk
- Up to 300 m long tows/push barges
- Unique power-train and steering designs
- A single regulatory regime: The Army Corps of Engineers



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### The Mississippi – A Historic View

- Crucial role in economic development
- Began as sole commercial transport route
- Seen as primary focus for all transport
- Displaced by the railroads for some cargoes
- Interstates increased competition level
- Now focused on large volume flows:
- Steel, liquid bulk, dry bulk etc.
- Notable absence of major container traffic

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### The Mississippi – A Commercial View

- Highly competitive market:
  - Between waterway operators
  - Competition from road and rail
- Equipment utilisation critical
  - Empty backhauls, empty trip time
  - Mean speed increase
  - Economies of scale
- High level of Navigation Support
- Strong but consistent regulation

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### The Rhine

- Two main sections
  - The delta area connecting Rotterdam, Amsterdam, Antwerp etc.
  - The main river: Arnhem to Basel
- 2,000+ km of commercially navigable waterway
- Effects more than one country:
  - Netherlands, Germany, France, Belgium, Switzerland
- Purpose developed power trains
- River and sea specialist ships/barges

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### The Rhine – A Historic View

- 1868 Treaty of Manheim
- No effective competition for first 100 years
- Domination of ocean traffic :
  - Rotterdam, Amsterdam, Antwerp
- Containers first carried in 1966
- Container distribution in “Delta” major trade
- “Inland” destination containers less developed
- Bulk trade dominates “Inland” traffic
- Major regulatory push for Inland Waterway development

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### The Rhine – A Commercial View

- In the order of 12 main shipping companies
- Competition with road and rail problematic:
  - Road is 15 to 25% more expensive...
  - Rail is heavily subsidized...
- Lopez Syndrome
- The capacity, debt and rate trap
- Regulatory intervention major factor



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### Other Relevant Inland Waterways

- The Irrawaddy River and the:
  - pre 1942 Irrawaddy Flotilla Company
  - Specially design barges and self propelled steamers
- The Snake/Columbia River Navigation
  - Timber and raw material driven
  - Successful container operation
  - Removal of Dams for Environmental Reasons affecting viability

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### Lessons for the Yangtze River

- Beware road and rail competition
- Focus on dry and liquid bulk products
- Ensure consistent regulation
- Don't over regulate
- Stimulate competition
- Purpose design efficient barges and power trains
- Provide market information system

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# Thank You

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