TRB 91st Annual Meeting
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Intermodal Freight Transport
(AT045)

Terrence Moore
Director – Business Development
AEP River Operations
Today’s Presentation

• Who is AEP River Operations

• Barge Characteristics and Outlook

• Inland River Industry

• Commodity Review – Industry Outlook

• Barge Industry Benefits & Challenges

• Partnerships in Action – Synergies and Slam Dunks
AEP River Operations
Who are we?

- American Electric Power (AEP) is one of the largest electric utilities in the United States, delivering electricity to more than 5.3 million customers in 11 states and supplying 38,000 megawatts.

- Provides a strong financial foundation.

- Encourages investment in safety and people.

- AEP River Operations is a fully-integrated barge line that delivers over **73 million tons** of dry cargo for our customers each year. Wholly-owned subsidiary of AEP.

- Leader in fleet investment with the newest, most environmentally friendly boats and barges in the industry.
AEP River Operations
Strategically Located Full-Service Inland Waterways Carrier

• St. Louis, Missouri Headquarters
  • ~1,500 employees

• Full Service Inland Waterways Carrier
  • Over 3400 Hopper Barges
  • 62 Towboats
  • 25 Fleet and Shuttle Boats

• Regional Operations
  • Pittsburgh, PA, New Orleans, LA, Lakin, WV, Paducah, KY, Mobile, AL

• Gulf Operations
  • Full Service Shipyard
  • Barge Cleaning and Repair
  • Fleeting and Shifting
  • Midstream Transfers
AEP River Operations
Gulf Operations
New Boat Construction

Investing in Boat Fleet

We have built 35 new boats since 2007.
700 HP – 3,000 HP class
Harbor Tugs and Shuttle Boats
6,000 HP Class
Operates on Lower Mississippi River from Cairo to New Orleans & Ohio River
11,000 HP Class

Operates on Lower Mississippi River between St. Louis and New Orleans
AEP River Operations

Matching Barges to Cargos

**Fiber Lift Cover Barges**
- Steel coils and rolls, grain, fertilizer, cement, lime, limestone, project cargo, aluminum, gypsum

**Steel Roll Top Barges**
- Scheduled into terminals with limited cover handling capacity – same commodities as fiber lift covers

**Open Hopper Barges**
- Coal, pet coke, ores, steel raw materials, scrap metals, sand, gravel, limestone, and project cargo
AEP River Operations
Barge Fundamentals & Characteristics

Typical Barge Dimensions
200’ x 35’ x 13’

The outside box is called the hull and the inside box is known as the cargo compartment or cargo box.

The void spaces provide flotation and protect the cargo if the outer hull is damaged.

A barge is one welded steel box inside another welded steel box.
## Barge Industry Snapshot

### Hopper Barge Fleet Summary

<table>
<thead>
<tr>
<th>Carrier</th>
<th>Open Hoppers</th>
<th>Covered Hoppers</th>
<th>Total</th>
<th>% of Fleet</th>
<th>Average Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingram Barge Co.</td>
<td>2,251</td>
<td>1,477</td>
<td>3,728</td>
<td>20%</td>
<td>15.2</td>
</tr>
<tr>
<td>AEP River Operations</td>
<td>1,114</td>
<td>2,063</td>
<td>3,177</td>
<td>17%</td>
<td>10.1</td>
</tr>
<tr>
<td>American Commercial Lines</td>
<td>381</td>
<td>1,873</td>
<td>2,254</td>
<td>12%</td>
<td>21.1</td>
</tr>
<tr>
<td>Archer Daniels Midland</td>
<td>2,034</td>
<td>2,034</td>
<td>2,034</td>
<td>11%</td>
<td>25.0</td>
</tr>
<tr>
<td>SCF*</td>
<td>1,083</td>
<td>1,083</td>
<td>1,083</td>
<td>6%</td>
<td>13.3</td>
</tr>
<tr>
<td>Crounse Corp.</td>
<td>948</td>
<td></td>
<td>948</td>
<td>5%</td>
<td>13.3</td>
</tr>
<tr>
<td>Cargill</td>
<td></td>
<td>829</td>
<td>829</td>
<td>4%</td>
<td>15.0</td>
</tr>
<tr>
<td>U.S. United</td>
<td>497</td>
<td>183</td>
<td>680</td>
<td>4%</td>
<td>15.0</td>
</tr>
<tr>
<td>CONSOL Energy</td>
<td>664</td>
<td></td>
<td>664</td>
<td>4%</td>
<td>15.7</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>5,855</strong></td>
<td><strong>9,542</strong></td>
<td><strong>15,397</strong></td>
<td><strong>83%</strong></td>
<td></td>
</tr>
<tr>
<td><strong>26 Others</strong></td>
<td><strong>1,461</strong></td>
<td><strong>1,774</strong></td>
<td><strong>3,235</strong></td>
<td><strong>17%</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total Fleet</strong></td>
<td><strong>7,316</strong></td>
<td><strong>11,316</strong></td>
<td><strong>18,632</strong></td>
<td><strong>100%</strong></td>
<td><strong>15.6</strong></td>
</tr>
</tbody>
</table>

Top four carriers comprise 60% of total fleet

Source: Informa Economics Barge Fleet Profile

* Includes the Bunge barges
New Hopper Barge Construction
Investing in Barge Fleet

- We have built over 650 barges since 2007

Size: 200' x 35' / 13' Hull
Capacity: 1,500 – 1,700 tons
AEP River Operations
One of America’s largest dry cargo carriers

Over 73 million tons shipped in 2011

2011 Tons by Commodity Group

- Coal & Coke: 56%
- Agriculture: 12%
- Steel & Metals: 22%
- Construction
- Other
Construction Materials
Agricultural Products
Coal & Coke
Steel, Ores & Alloys
Barge Efficiencies vs. Rail and Truck

Inland waterways transport generates fewer emissions than rail or truck per ton-mile.

Barge transportation generates the lowest emissions as measured in grams per ton-miles in four standards tracked by the EPA:

- Particulate matter (PM)
- Hydrocarbons (HC)
- Carbon monoxide (CO)
- Nitrogen oxides (NOx)

Transporting freight by water is also the most energy-efficient choice.

Barges can move one ton of cargo 576 miles per gallon of fuel. A rail car would move the same ton of cargo 413 miles, and a truck only 155 miles.
Weight of Shipments by Transportation Mode: 2009 and 2040 (Millions of Tons)

<table>
<thead>
<tr>
<th>Mode</th>
<th>2009</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Domestic</td>
</tr>
<tr>
<td>Total</td>
<td>16,122</td>
<td>14,397</td>
</tr>
<tr>
<td>Truck</td>
<td>10,868</td>
<td>10,713</td>
</tr>
<tr>
<td>Rail</td>
<td>1,689</td>
<td>1,575</td>
</tr>
<tr>
<td>Water</td>
<td>734</td>
<td>351</td>
</tr>
<tr>
<td>Air, air &amp; truck</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>Multiple modes &amp; mail¹</td>
<td>1,336</td>
<td>458</td>
</tr>
<tr>
<td>Pipeline</td>
<td>1,220</td>
<td>1,069</td>
</tr>
<tr>
<td>Other &amp; unknown</td>
<td>265</td>
<td>229</td>
</tr>
</tbody>
</table>

¹In this table, multiple modes & mail includes export and import shipments that move domestically by a different mode than the mode
²Data do not include imports and exports that pass through the United States from a foreign origin to a foreign destination by any mode.

Notes: Numbers may not add to totals due to rounding. The 2009 data are provisional estimates, which are based on selected modal

Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight
Challenges

Aging Infrastructure

117 out of 240 locks are over 50 years old
Differences between modes

- Infrastructure Investment
- Accessibility to final destination
- Transit Lead-times
- Cargo Capacity
- Environmental Footprint
By putting our heads together.....

... we can develop cooperation which optimize supply chain logistics
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