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Memphis: Incomparable Reach

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An outstanding variety of transportation options helps make Memphis an ideal location for logistics operations.

MORE TO THE STORY:

- The Memphis-Panama Connection
- Magnet for Manufacturers
- Room to Grow
- Reducing the Carbon Footprint

It always pays to be well-connected, and you won't find better connections than the ones in Memphis. There may be no other city in North America that offers as many fast and effective ways to move freight to and from so many places.

Transportation via the Four Rs—rail, runway, roads, and river—gives Memphis a tremendous reach. Most of the major East, West, and Gulf Coast ports, the contiguous U.S. states, Canada, Mexico, and all the world's major markets are reached with an easy trip from Memphis, thanks to the dense transportation network that radiates from this prime logistics market.

With five Class I railroads, seven interstate and U.S. highways, one of the world's leading cargo airports, and the nation's fourth-largest inland port, Memphis offers shippers an outstanding combination of efficiency and flexibility. Add the city's broad array of logistics services, and its abundant and reasonably priced warehouse space, and it's easy to see how Memphis earned its reputation as America's Distribution Center and America's Aerotropolis.

NEW RAIL AND INTERMODAL INVESTMENTS

Much of the big logistics news in Memphis these days has to do with its rail and intermodal infrastructure.

The third-largest U.S. rail center, Memphis offers service via Norfolk Southern (NS), BNSF

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Railway, Union Pacific (UP), CSX, and Canadian National (CN) Railway. Companies shipping from Memphis by rail can reach 45 U.S. states, Canada, or Mexico within two days. Rail carriers also tie Memphis to a wide variety of North American ports.

Memphis houses six fully operational railyards that offer the combined capacity to lift more than two million intermodal containers per year. And that capacity is growing as rail carriers continue to invest in Memphis.



Six railyards—including Norfolk Southern's new Memphis Regional Intermodal Facility—offer the combined capacity to lift more than two million intermodal containers per year.

In 2010, BNSF completed a \$200-million project to expand and rebuild its Memphis hub. This new Memphis Intermodal Facility doubled the railroad's lift capacity at the site to one million lifts per year. Equipment at the facility includes eight wide-span, electric, rail-mounted gantry cranes. Three of those are stacking cranes that move containers between trucks and stacks. The other five are production cranes used to load and unload trucks, and stack containers on railcars.

The site also features an automated gate system for moving trucks in and out with maximum efficiency. This new system has improved truck turn times from 60 minutes to about 25 minutes.

"Memphis is one of the nation's most strategic logistics hubs," says Steve Branscum, BNSF group vice president, consumer products. "BNSF's significant investment in this new facility not only makes it one of the most efficient and environmentally friendly intermodal facilities in the country, but also improves Memphis' position in the global supply chain by offering shippers more capacity and service options."

CN is also expanding, with plans to construct its new Memphis Logistics Park next door to the CN-CSX intermodal gateway in the Frank C. Pidgeon Industrial Park. In early 2012, the Port of Memphis granted CN a 10-year option to purchase up to 800 acres in the park. The new facility will provide space for distribution centers that ship or receive intermodal freight.

EXPANDING CAPACITY

In July 2012, NS opened the first section of its new Memphis Regional Intermodal Facility in Rossville. When complete, the \$105-million project will cover more than 400 acres and provide the capacity to handle more than 327,000 containers and trailers per year.

The facility, which is expected to create or enhance 6,200 jobs in the Memphis region over the next 10 years, is part of NS's \$2.5-billion Crescent Corridor project to develop a high-speed 2,500-mile intermodal rail line linking Memphis and New Orleans with New Jersey.

"The Memphis intermodal facility anchors Norfolk Southern's Crescent Corridor rail route, connecting the Northeast and Southeast with high-speed, reliable, truck-competitive intermodal services," says Norfolk Southern CEO Wick Moorman.

The facility uses the latest in gate and terminal automation technology, which shortens the wait time for trucks entering the terminal, reducing exhaust emissions and improving truck driver productivity. Additionally, state-of-the-art, low-emission cranes will operate within the terminal, and the main administration building was built to Leadership in

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Energy and Environmental Design Certification standards.

These expansion projects, combined with Memphis' position as a hub on so many major rail lines, make the city a superior distribution point, says Buzz Fly, vice president of Patterson Warehouses. The Memphis-based logistics services provider maintains five buildings in the city, with a total of 1.5 million square feet of warehouse space. Patterson specializes in import distribution and retail fulfillment, medical and food products, construction materials, and general commodities.

Memphis' expanding capacity to handle intermodal containers provides a major advantage for shippers importing freight from Asia. Although Chicago is also served by five Class I railroads, that city is already so developed that there's little room for rail carriers to enlarge their facilities there. "If you try to send freight to Chicago, it might get delayed waiting to be unloaded from the trains," Fly explains.

But Memphis still has a great deal of available land, and the ability to expand its infrastructure. "That gives the city a natural advantage," he adds.



Memphis' transportation connections would be meaningless without ample storage facilities. Patterson Warehouses maintains five locations in the area, offering a total of 1.5 million square feet of warehouse space for import distribution and retail fulfillment.

QUADRAMODAL CITY

Memphis' rail and intermodal infrastructure are enough to make the city a prime business location, but it is the variety of transportation options that distinguishes it as a logistics powerhouse.

"Memphis is a 'quadramodal' transportation hub," says Yossi Sheffi, Elisha Gray II professor of engineering systems at the Massachusetts Institute of Technology, and director of the MIT Center for Transportation and Logistics.

Sheffi devotes an entire chapter to Memphis in his new book, *Logistics Clusters: Delivering Value and Driving Growth*, a study of cities that have developed particularly dense concentrations of logistics facilities and services. According to the book, published by MIT Press in September 2012, these clusters are strong engines of economic activity and job creation.

"Memphis started to become a logistics cluster with the cotton trade," Sheffi notes. "Today, the city's logistics success lies with the presence of the railroads, FedEx's World Hub, the highway network, and the Mississippi River."

UPS, DHL, and the U.S. Postal Service also have major operations in Memphis. More than 400 trucking companies and numerous logistics service providers operate in the city. A world-class cargo airport and one of the largest inland ports in the United States also help to extend Memphis' reach.

AIR CARGO ADVANTAGE

For some companies, the most compelling reason to locate in Memphis is a facility that occupies a sizeable portion of the Memphis International Airport: the FedEx World Hub, a transportation nerve center that processes more than 3.3 million packages every day, and connects shippers to more than 220 countries and territories on six continents.

Companies that locate close to FedEx in Memphis gain a big advantage: they can drop off packages for next-day delivery later than their counterparts in any other U.S. city.

"The cut-off is midnight Central Time," says Tom Kaden, vice president of warehousing and distribution at Mallory Alexander, a Memphis-based firm whose services include customs brokerage, freight forwarding, warehousing, distribution, and transportation. Late cut-off is a boon for companies that use Mallory's distribution services.

"West Coast customers can take orders out of their inventory stock in Memphis until 10 p.m. Central time, and have them delivered the next day," Kaden notes.

Another group that benefits greatly from the FedEx factor in Memphis is consumers who order flowers from Mallory customer 1-800-Flowers. "During their key holiday periods, we ship 50,000 to 60,000 fresh bouquets to recipients all over the United States," says Kaden.

Many procrastinating consumers have escaped embarrassment on Valentine's Day thanks to Mallory's employees and FedEx's late cut-off time in Memphis.

"We fill those orders up to midnight on Feb. 13, and FedEx sends them out to reach their destination on Valentine's Day," Kaden says.

Proximity to the World Hub also allows Medtronic, one of the world's largest manufacturers of medical devices, to fill orders from physicians who need items for surgery the next day, points out Larry Cox, president and CEO of the Memphis-Shelby County Airport Authority.

That access is key to the success of the massive Flextronics repair depot in Memphis. "The company ships laptop computers into Memphis, works on them overnight or the next day, then ships them out," says Cox.

In addition to the World Hub, FedEx's other Memphis operations include two FedEx Ground hubs, a FedEx SmartPost hub, and two FedEx Freight service centers. The city is also the world headquarters for FedEx Corporation, FedEx Express, FedEx Freight, FedEx Supply Chain Services, and FedEx Trade Networks.

ATTRACTING AIR FREIGHT

As big an influence as it wields, FedEx is far from the only factor making Memphis a magnet for companies that ship by air. Memphis International Airport has been the busiest air cargo airport in North America for 19 years in a row, and currently it is second in the world only to Hong Kong. In 2011, 3.9 million tons of air cargo passed through Memphis.

UPS operates a major sorting center on airport property, serving both its air and surface transportation operations. Five other all-cargo airlines provide niche services and flights to smaller cities.

"Memphis can serve any cargo need a shipper might have," says Cox.

Memphis International has four runways and the newest, most efficient air traffic control tower in the country. A central location in the continental United States and a mild climate, with few weather interruptions, also make Memphis an attractive choice for air cargo.

To make air shipments to and from Memphis even more convenient, Memphis International recently opened Cargo Central, featuring a dedicated cargo ramp to serve chartered cargo planes. "We can park 12 747-400s at one time," says Cox.

When Cargo Central's five-phase development is complete, it will offer 282,000 square feet of build-to-suit space for warehousing and other activities for companies that need easy access to air cargo services.

A central location in the continental United States and a mild climate make Memphis an attractive choice for air cargo.

Air transportation is so central to Memphis' economy that local officials have made the airport the centerpiece of an initiative to further develop the city's transportation infrastructure and economy, basing their efforts on a concept called the aerotropolis—a thriving urban region with an airport at its heart.



Truck shipments can reach more points next-day from Memphis than from any other U.S. city. And 70 percent of the U.S. population lives within a two-day drive from the city.

ROADS AND RIVERS

No matter how a company ships goods, at some point that freight will probably travel by truck. Memphis' central U.S. location, and access to several important highway corridors, make it one of the best spots in the country for truck transportation.

"You can reach more points next-day by truck than from any other city," says Fly. Those points include major markets such as Chicago, Atlanta, Dallas, Houston, St. Louis, and Kansas City. "And about 70 percent of the U.S. population is two days away by truck," he adds.

Helping to speed product to and from those population centers are several interstate highways that converge in Memphis. Running through the center of the city is I-40, a coast-to-coast route across the United States. The stretch of I-40 from Memphis to Little Rock, Ark., is the nation's third-busiest trucking corridor.

I-55 puts Memphis on a major midwestern route that includes New Orleans, St. Louis, and Chicago. The city also stands at the midway point of the NAFTA Highway, a new corridor built on I-69 that, when complete, will run from Montreal to the Texas-Mexico border. And Memphis is the starting point of the future I-22, which will provide a direct connection to Birmingham and Atlanta.

THE FOURTH R

The fourth R, the Mississippi River, has been vital to Memphis' economy since the city's founding in 1827. Today, the Port of Memphis is the fourth-largest inland U.S. port, and the second-largest inland port on the shallow draft portion of the Mississippi. It handles more than 16 million tons of cargo per year by barge, and U.S. Customs collects more import duties there than from most major U.S. seaports.

The top commodities handled at the Port of Memphis are petroleum, coal, food and agricultural products, crude material, and chemicals and related products. Nearly 200 companies have facilities at the port, in the Frank C. Pidgeon Industrial Park or in the President's Island complex. Among those companies is the only petroleum refinery in Tennessee, operated by oil refiner Valero.

No matter which modes or transportation lanes a company builds into its strategy,

developing a backup plan is always wise. Memphis offers an advantage that's key to contingency planning—the ability to easily substitute one good transportation choice for another.

"Memphis has flexibility because it serves almost every port in the United States and Canada with a single rail connection," says Dexter Muller, senior vice president, community development at the Greater Memphis Chamber. Companies importing goods through the Port of Los Angeles-Long Beach, for instance, can easily move to Canada's Port of Prince Rupert, or through the Panama Canal to ports such as Mobile, Jacksonville, Savannah, or Halifax should conditions make one of those locations a better option.

"Any number of factors could cause supply chain disruption," says Jim Apple, senior vice president, business development at Raymond James and chair of the marketing council of the Greater Memphis Chamber's Regional Logistics Council. "Memphis offers shippers the greatest flexibility."

Whether there's an impending port strike, a weather disaster, or another condition that forces a change in transport plans, Memphis provides many opportunities for rethinking routes or switching modes.

Richard McDuffie, chief operating officer of Memphis-based logistics and transportation company Dunavant, cites the example of grain shipments that normally travel by barge from Memphis to New Orleans. The recent drought has caused problems for that route.

"The Mississippi River is currently at its lowest point in years," McDuffie says. "Dunavant is actively exploring all opportunities to help manage products impacted by the drought."

Some bulk shippers in Memphis make tradeoffs between different modes as a matter of course. "Depending on where shipments are going and what the rates are, bulk shippers use more rail or river transport," says Sheffi. "They can switch between them to get the optimal combination of cost and service for movement in and out of a plant."

Memphis' multimodal character benefits all kinds of shippers, says McDuffie, whose company serves customers in the agriculture, automotive, food, retail, and chemical industries, among others.

"Depending on the product's required lead time, Memphis offers multimodal and multi-carrier options that allow shipping by barge, rail, intermodal, truckload, less-than-truckload, or air," he says.

"If businesses have critical shipments with late-night cut-offs that must arrive the next morning, the FedEx main hub or UPS are both options," McDuffie continues. "Being in Memphis allows shippers to pick the best service and price relationship to serve their own needs, or serve their customers."

The ability to switch modes is especially important in the current era of high fuel prices, says J. Kenneth Hazen, president and CEO of CTSI-Global, a Memphis-based provider of transportation management systems and other logistics technology. Memphis' multiple options might pose an even greater advantage as the graying of the truck driving population exacerbates the capacity shortage.

"The average truck driver age today is 56 years old," Hazen says. "A lot of strategic planning is happening. What will companies do in 10 years, when all the Baby Boomers are retired? They need a backup option."

With its well-connected transportation network, Memphis offers backups in abundance—and an incomparable reach to U.S. locations and beyond.

For information on featuring your region in an Economic Development Supplement, contact James O. Armstrong at 314-984-9007.

The Memphis-Panama Connection

The number of transportation options Memphis offers shippers will increase even further in 2014 with the reopening of the Panama Canal.

"Memphis as America's Distribution Center will be enhanced further with the Panama Canal expansion, by adding a third coast for expedited inbound freight options," says Neely Mallory III, president of Mallory Alexander International Logistics and chair of the Greater Memphis Chamber's Regional Logistics Council. "These assets yield operating efficiencies for the city's current and prospective businesses."

The Regional Logistics Council focuses on promoting Memphis' assets, including its geographic location and world-class infrastructure in all four transportation modes. It also works to enhance that infrastructure.

Magnet for Manufacturers

While manufacturing is on the decline in much of the United States, Memphis has experienced a resurgence. In the past few years, at least eight manufacturers have made investments ranging from \$50 million to more than \$300 million in Memphis. They are: Blues City Brewing Company, Cargill, Electrolux, Kruger Products, Mitsubishi Chemical Corp., Mitsubishi Electric Power Products Inc. (MEPPI), Nucor Steel, and Riviana Foods.

Their investments include new locations in the city, expansions of existing operations, and consolidation of operations from several cities into Memphis. Montreal-based Kruger, for example, is spending \$316 million to upgrade its KTG USA facility in Memphis, which manufactures White Cloud bathroom and facial tissue.

Most of these companies have chosen to locate or expand in Memphis in part because of the multiple transportation options available there. For example, MEPPI's new facility for producing large power transformers is in the Rivergate Industrial Park, giving it immediate access to the rail lines and barges needed to transport those immense products, as well as access to highways for smaller components. Electrolux's North American Cooking Products plant in the Frank C. Pidgeon Industrial Park enjoys the same sort of access to multiple transportation modes.

Other recent investment in Memphis includes:

- In January 2012, Nucor announced plans to expand production of specialty steel bar at its Memphis plant. Nucor has made \$350 million in capital investments in that facility since 2006, and in 2012 the company approved another \$113-million expansion in Memphis.
- In 2011, the facility received shipments of scrap steel from more than 20 states. Fifty percent of that tonnage moved by rail, 34 percent by truck, and 16 percent by barge. The same year, Nucor shipped 60 percent of its finished product out of the facility by rail and 40 percent by truck.
- In 2010, Riviana Foods opened a new 400,000-square-foot manufacturing facility in Memphis, part of an expansion in the city that started in 2006. The plant receives an average of 30 truckloads of rice per day, along with an average of nine truckloads of supplies such as corrugate, cartons, and CHEP pallets.
- For outbound shipments of finished products, Riviana takes advantage of an array of transportation options. In 2012, it shipped an average of 76 loads per week by truck, 128 loads via intermodal, and six by boxcar. Buyers made their own arrangement to pick up another 14 loads.
- Cargill has been conducting an \$82-million renovation and expansion of its corn mill on President's Island in Memphis. In 2011, Cargill received an average of 209 shipments of raw material per week via rail and seven via barge. In that same year, it shipped an average of 628 loads of finished goods by truck, 201 by intermodal, 162 by rail, and four by barge.

Manufacturing leaders understand that efficient transportation links and flexible options help drive the bottom line. The variety of rail lines, air routes, highways, and waterways stretching from the heart of Memphis to all corners of North America gives these companies the extended reach it takes to hit their goals.

Room to Grow

When it comes to finding available space for manufacturing and distribution facilities, businesses have plenty of choices in Memphis—and more could be on the way, due to more than 1.5 million square feet of positive absorption in third quarter 2012.

"Currently, availability exists in Class A, B, and C properties in the greater Memphis area," says Jim Mercer, executive vice president at commercial real estate services firm CB Richard Ellis Memphis LLC, an affiliate of CBRE Group Inc., headquartered in Los Angeles. "Seven available buildings are 400,000 square feet and larger, but only four are Class A properties—and leasing of Class A space continues to be the dominant trend in the Memphis market."

Generally, Class A properties are newer, and feature ceiling heights of 28 to 30 feet; Early Suppression, Fast Response sprinkler systems; and truck courts of at least 135 feet. Companies seeking spaces between 100,000 and 400,000 square feet can choose from 53 available facilities in Memphis, 12 of which are Class A properties.

To meet demand for larger, Class A properties, speculative facility construction is occurring in Memphis for the first time since 2008. Real estate developer Industrial Developments International is building two speculative facilities, available by the end of 2012.

One property offers 869,000 square feet of space, while the other is 267,000 square feet—of which 150,000 square feet is already pre-leased. Three other developers are evaluating speculative construction, as well.

The majority of these properties are, or will be, located in industrial parks with easy access to the interstate system, Memphis International Airport, the FedEx World Hub, and railroad intermodal yards.

Shippers are taking full advantage of all the logistics benefits Memphis has to offer. "One medical supply company recently relocated a large distribution operation to Memphis to be closer to its markets and take advantage of the lower logistics costs provided by the four major transportation modes existing in the city," notes Mercer.

Reducing the Carbon Footprint

Many companies these days are working hard to reduce their carbon footprints. Consumers want to support companies that demonstrate concern for the environment. And when large corporations evaluate potential suppliers, one measure they often apply is how effectively the company is working to minimize its carbon emissions.

"Transportation can contribute 25 to 50 percent toward a company's carbon footprint—or even more, in certain businesses," says Dexter Muller, senior vice president, community development at the Greater Memphis Chamber.

With its numerous transportation options, Memphis represents an excellent location for companies that are serious about reducing fuel consumption and its impact on the environment.

"Barge transportation releases less carbon into the atmosphere than other transport modes," says Muller. "The second-best option is rail, and Memphis has an edge over most cities in both modes."

Although trucking requires more fuel per unit of freight than rail or water transportation, most freight travels over the road at least part of the way. For many loads, time constraints or cost factors make truck transportation the optimal choice. But even in this case, a location in Memphis offers an environmental advantage. "Truck trips from Memphis are shorter, and therefore use less fuel, because the city is closer to more metropolitan markets than most other cities," Muller says.

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