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Waterways

A publication of the Upper Mississippi Waterway Association
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Inside this issue:

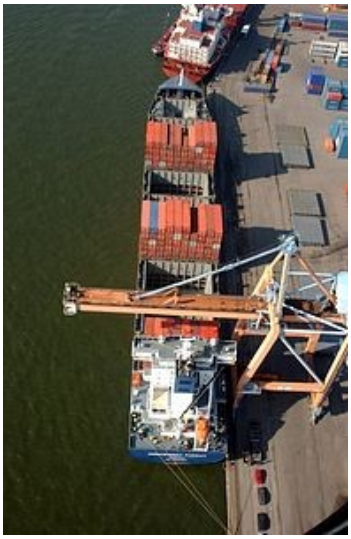
More and more talk about COB viability

UMWA members with long memories will recall that Executive Director Russ Eichman and others in the Association have been talking up and writing about the Container on Barge (COB) concept for a long time - well before past issues of *Waterways* were archived online. But even though it seemed like a good, common sense idea that would help shippers and the environment, it hasn't gained much traction.

May be changing

A commercially viable COB route between Memphis and New Orleans ended late last decade because of the 'Great Recession' and lack of backhauls. Others have explored the idea but questioned whether or not the river system could generate the critical mass of container traffic to make COB work.

Things may be changing with a recent successful demonstration by Ingram Barge Company to America's Central Port and a US Maritime Administration designation of the Mississippi and Illinois Rivers as Marine Highway projects. M-55 and M35, the New Orleans to Minnesota highways have been strongly supported and advocated by states along the routes. And working groups are also developing partnerships between public and private entities including some large shippers such as Walmart, Home Depot and the Illinois Soybean Association.



Above: The Port of Antwerp handles containers from all over the world

Special challenges

However, as one state's supporting documentation makes clear, there are special challenges along the M-35 highway. They include 25 locks with an average age of 72 years and 3 locks that are at least 30 years beyond their design life.

More and more organizations are signing onto the concept. For example, the Inland Rivers, Ports and Terminals Association came out in strong support at its recent annual conference in St. Louis.

And the Mississippi River Cities and Towns Initiative has made COB a major initiative and says COB could be an economically and environmentally viable alternative method of moving certain cargoes.

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From the Executive Director...

Use and Abuse of Water Supply

TV and press media have recently focused on landmark low water levels in major lakes and aquifers in Western states. Nevada's Lake Mead, for example, is expected to drop to its lowest level in recorded history in early May, according to Reuters news sources. This lake supplies water to agriculture and about 40 million people in Nevada, Arizona, Southern California and Northern Mexico.

At about the same time, California's Water Resources Control Board approved emergency drought regulations to reduce water use by 25 percent statewide. Governor Brown upped the ante by announcing legislation that would increase fines up to $10,000 for the worst water wasters – twice the current amount.

"...Seeding the right storms the right way can produce 5-15 percent more precip..."

According to the Bureau of Reclamation's Rose Davis, "We're only at 38 percent full. Lake Mead hasn't been this low since we were filling it in the 1930s". Several other man-made reservoirs have dropped to as low as 45 percent of capacity as well. The source of these waters, the Colorado River, suffers from years of severe drought as snowfall in the Rocky Mountains dropped to about 47 percent of normal in 2013.

The more the water drops, the greater the chances are that Hoover Dam's electric output could be seriously affected. Davis said that all around, this is bad news as there's not much good to say about 15 years of drought.

Cloud Seeding Seen as Hope

The spring issue of *River Crossings* contained an article stating that after almost two decades of drought, desperate Colorado River water managers are welcoming a new cloud-seeding study prepared for the Wyoming Water Development Commission released December 2014. Before revealing the results of the study, here's a brief backstory.

Cloud-seeding is not a new concept; it dates back to the 1940s, using aircraft or land-based generators to inject microparticles of silver iodide into clouds, (hopefully) causing ice crystals to form and fall as rain/snow. According to *River Crossings*, this process has been used by ski resorts, water districts and farmers across the West, who swear by the process.

The problem is that while it might rain or snow after a cloud has been seeded, there is no way to know for certain whether the seeding actually caused the precipitation; even after the expenditure of millions of dollars a year on machines and flights.

As a result, the National Research Council (NRC) concluded in a 2003 report there was "no convincing scientific proof", that cloud seeding or other weather modification worked. There had simply been too little robust research on the topic, said the NRC.

In response, continued *River Crossings*, the Wyoming Legislature took the NRC challenge and put $14 million into a major 10-year study that employed the latest scientific techniques recommended by the NRC, as well as an independent evaluation team.

Here are some of the study results:

Seeding the right storms the right way can produce 5-15 percent more precip;

That could increase stream flows by as much as 3.7 percent;

Seeding has next to no downwind impact, suggesting that seeding storms to get precip in one place does not decrease precip elsewhere.

A senior scientist for the independent evaluation team summed it up this way: The Wyoming program demonstrated that with modern technologies – satellite-control, good weather forecasting and real-time modeling – silver iodide injected into the right cloud at the right place will produce a measureable effect.

A 2012 study released by the U.S. Bureau of Reclamation estimated that 'weather modification' could increase water supply at a cost of $30 to $60 per acre foot each year. Other methods to augment water supply, such as desalination and importing water from other basins, run orders of magni-

tude higher. Cloud-seeding is not drought-busting technology, but it can increase [precip in] a bad year and make a normal year better, said one supporter of the Wyoming project.

No Atmospheric Water Rights

Ever a well written publication, the *River Crossings* article examines the flip side of the cloud-seeding coin.

From a water rights perspective, cloud-seeding and other weather modification efforts are premised on the tenant that artificially produced precip is treated just like any other in that there is no such thing as atmospheric water rights. For example, if clouds are seeded upstream of a distant reservoir, that precip may not reach the reservoir if someone with an upstream water right exercises it. Stated another way, rain falls where it falls and there is a water rights issue only after it hits the ground – even if the downstream entity helps pay for the seeding, they have no absolute right to it.

Nevertheless, supporters say that water rights probably would have been exercised anyway, and without more water [from the seeding] it would only have caused reservoir levels to drop further. "Our view", said a Colorado River programs manager "is that projects where it's difficult to measure the yield should always be viewed as system water, meaning that it's subject to the law of the river".

As a footnote, *River Crossings* revealed that seeding studies in Colorado were scrapped in the early 1970s after a drastic flood hit Rapid City, SD area. As then, the question will undoubtedly arise again whether all of this cloud seeding in the West could ultimately affect rainfall amounts that might otherwise impact, for good or bad, the Middle Western parts of the Mississippi River Basin.

While cloud-seeding may not appear consequential to commercial navigation on Midwestern rivers, it must be remembered that the Mississippi River watershed extends westward to Idaho, most of Wyoming and Colorado. In turn, this area includes many of the states discussed in the Wyoming study that provide flow into the Mississippi River primarily through the Missouri and Arkansas rivers, making drought conditions in Western states as much our problem as it is theirs.

"…artificially produced precip is treated just like any other in that there is no such thing as atmospheric water rights…"

Other items of interest:

- A new TV spot is running in the Washington D.C., market, telling decision makers about the vital waterway transportation industry. Waterways Council encourages interested parties to post a link to the spot on company or organization web sites and other online resources.

- The St. Paul District of the Corps of Engineers is working on Mississippi River habitat renewal near the Harpers Slough backwater near Lynxville, Wis. The project will build new islands and protect existing ones and will be completed be completed in 2019 and improves habitat for wildlife. The islands are built with dredged material from the main channel and rock is being placed and vegetation planted.

- The Coast Guard has said "no" to the idea of a river barge route along the western shore of Lake Michigan. Jim Byrum of the Michigan Agri-Business Association says the group is very disappointed, but says the real losers are the citizens of Muskegon and surrounding areas.

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Also supportive is St. Lois Mayor Francis Slay, a member of the group.

"It's something that we don't have a lot of now," he says. "What we want to do is make sure we get it so we can be more efficient in moving cargo up and the down the river and do a better job of taking advantage of this river for its commercial aspects."

It seems certain that if the logistics can be worked out there will be demand from the agricultural sector for COB.

As the *National Journal* points out, "American agriculture may be the most competitive it's ever been, but farmers and ranchers face real challenges in getting their products to market through the nation's waterways, rails, roads and ports – especially overseas."

The publication says, "The easiest to accomplish may be the reconstruction of locks and dams on the Mississippi and other rivers. They were built between 1900 and 1930, constructed with great fanfare in an era when the country was proud of big construction projects to control Mother Nature, but they have languished for decades, mired in environmental conflicts and financing problems."

And *Fortune* magazine questions whether the Mississippi River system, including the connecting streams, is ready to handle the new Panama Canal.

"The Mississippi River, combined with the Panama Canal, is the most efficient shipping route between the Eastern U.S. and Asia. But the river may be challenged to handle increased traffic when the expanded Panama Canal opens in 2016," Fortune says.

The article quotes Paul Kemp, a former LSU research geologist and consultant.

"The Mississippi is tied to a 15,000-mile inland waterway system. That's fairly unique in the world."

As *Fortune* points out, that network stretches as far northwest as Montana, and northeast to Pennsylvania.

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