UNION PACIFIC'S ROUTE ACROSS WISCONSIN

The Altoona Sub

BY MICHAEL BARGMANN/PHOTOS BY THE AUTHOR

Say "Altoona" and almost everyone conjures up images of mountain railroading in Pennsylvania. Yet, in western Wisconsin resides a distinctive line with a storied past that was one of the last Class I mainlines to use jointed rail, "searchlight" signals, and an active signal code line. That route is Union Pacific's Altoona Subdivision, part of the Adams Line that connects the Twin Cities to Milwaukee and Chicago. The Altoona Sub runs from a connection with BNSF Railway in St. Paul, Minn., to a point 2.8-miles west of Adams, Wis., a distance of 195.1 miles through the heart of "America's Dairyland."

The line is best known for hosting the famous *400* streamliners, but after Chicago & North Western discontinued them in July 1963 the importance of the Adams Line declined. Unlike parallel routes operated by the Milwaukee Road, Burlington, and Soo Line that carried transcontinental freight to the Pacific Northwest and Canada, the C&NW had

After a lengthy delay due to broken rails and meeting trains MCHVP and ZCHEM at Yukon, Union Pacific train MSSAD-17 is finally rolling through Eau Claire, Wis., on March 17, 2013. A "dog-catch" crew is onboard, and the 48-car train will terminate in Altoona. A diamond crossing with the Soo Line and tower were once located here. The building in the background was owned by Uniroyal and at one time was the fifth largest tire manufacturing plant in the country until it closed in 1991.

ABOVE: Train MSSAD-2 has just split the searchlights at MP 144.3 and is about to roll under I-94 near Black River Falls, Wis., on March 3, 2013. The train has returned to jointed rail and the engineer has slowed the train down to 30 m.p.h. The 13 autoracks on the head end were unloaded at the Drake St. Auto Facility in St. Paul, Minn.

RIGHT: EMD SD40-2s ruled the Altoona Sub before the SD9043MACs were demoted from coal service. Just before sunrise on April 4, 2013, unrebuilt UP 3450 was in the lead of a 74-car MSSPR-4 into Altoona.

no similar traffic. This made the C&NW mainline quiet by comparison, despite being the shortest route between the Twin Cities and Chicago.

The current operation is not the original Chicago-Twin Cities route and, like many, is the result of several different lines cobbled together. The current line west of Wyeville to St. Paul was built by the West Wisconsin Railway Co. and the St. Paul, Stillwater & Taylor's Falls, which reached St. Paul in 1872. The Chicago, St. Paul, Minneapolis & Omaha (The "Omaha Road") acquired the line to St. Paul in 1881 and in 1884 began construction of a 16-mile spur east of Wyeville to Necedah. The spur later became a part of the Adams Cutoff, which rerouted the mainline through Milwaukee and was completed in 1912.

C&NW gained control of the Omaha Road in 1882 with a purchase of roughly $10.5 million in stock. In 1957 C&NW leased the Omaha Road, and by 1972 it ceased to exist as a result of corporate merger. The C&NW route was the last Chicago-Twin Cities mainline to operate under its original name until the Union Pacific acquisition in 1995.

Similar to the Burlington and Milwaukee Road routes, the Altoona Sub was mostly double track, but when the *400s* left so did most of the redundant track. However, double track still remains in Altoona and from Sono Junction to the Hudson Bridge as well as Hazel Park Junction to St. Paul. Unlike the current routes of BNSF and Canadian Pacific that have dozens of trains daily and a track speed of 60 m.p.h., the Altoona Sub can have as few as four or five trains per day which run no faster than 50 m.p.h. and spend a lot of time at or below a very chasable 30 m.p.h.

Until recently, the Altoona Sub had seemingly been all but forgotten compared to other Class I mainlines if track and trackside equipment was any indication. Semaphore signals were still in use well into 1990, while wigwag crossing signals were in service into the 21st century on the neighboring Adams Sub. Track Warrant Control (TWC) and Automatic Block Signal (ABS) systems along with searchlight signals and code line remained in use along most of the line. To top it off, large sections of the Altoona Sub still had jointed rail in place as late as 2013. All combined, it made for a rare chance to witness classic infrastructure on a modern Class I mainline.

For a number of reasons Union Pacific is working to bring the Altoona Sub up to current standards. First, to comply with the Positive Train Control (PTC) mandate, all the existing searchlight signals need to be replaced. This also means the end of the active signal code line, a classic railroad technology that is serving its last useful days on a rapidly decreasing number of Class I mainlines.

To support the increase in oil and natural gas extraction, Wisconsin has seen an unprecedented increase in "frac" and silica sand mining. Much of this new traffic is travelling on the Altoona Sub. This has put a lot of stress on the aging infrastructure that previously saw mostly manifest trains. In the segments that still used jointed rail, it wasn't uncommon to have multiple broken rails after a cold winter night that would shut down the railroad for several hours.

Altoona Sub Traffic

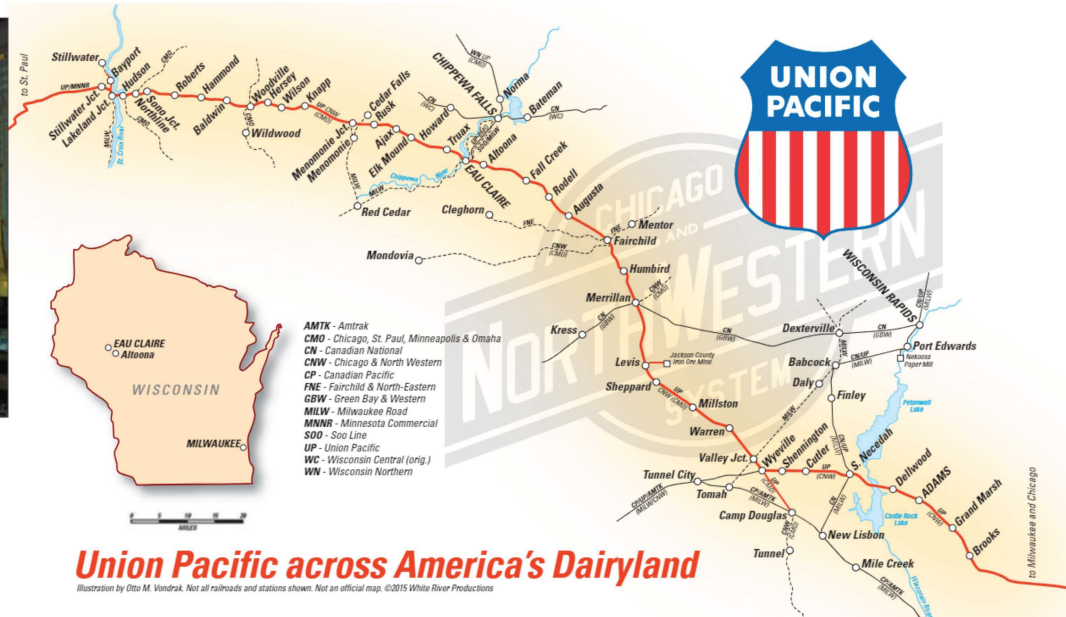
Despite passing through the heart of Wisconsin, very little of the traffic is agricultural and very few customers, except for the new sand mines, originate on line. Much of the freight is destined for interchange and customers in the Twin Cities. Powder River Basin coal is hauled on the line but only on the far eastern and western ends of the subdivision. About two to three coal trains per week operate from St. Paul to a power plant off the mainline in Bayport, Minn., and a similar amount run from Adams to the connection with the Canadian National's Valley Line at Necedah for Weston.

The lack of regular heavy unit trains across the majority of the subdivision is likely why the jointed rail in the middle of the subdivision lasted so long. A majority of the sand hauled comes off the Wisconsin Northern (WN) at Norma on the Chippewa Falls Sub in both unit trains and single carloads and travels both east to Chicago and west to the Twin Cities. Sand mines are served at Wyeville, Merrillan, and east of Augusta but several others are planned to locate along the Altoona Sub. Forest products, steel products, automobiles and fertilizer are also common commodities. The Altoona Sub hosts the only Norfolk Southern Triple Crown RoadRailer trains in Wisconsin and Minnesota, which run to the East Minneapolis Yard.

Operations

The Altoona Sub begins at the western edge of the yard limits at Adams at MP 199.1. Both Altoona and Adams are crew change points for all through trains except the Z-trains, which run Adams-East Minneapolis with one crew. It's only 90 miles from Altoona to the connection with BNSF but due to congestion in St. Paul and beyond, it's not uncommon for trains to need 12 hours or more to complete the trip. Trains going to or from Valley Park get a new crew at Western Avenue in St. Paul.

In St. Paul the Altoona Sub ends with a connection to the BNSF Midway Sub at Westminster to South St. Paul and Valley Park and Jackson Street to East Minneapolis. In previous years East Minneapolis originated and terminated manifests for the Altoona Sub but with the downsizing of the yard and abandonment of the old Minneapolis & St. Louis mainline, manifests now originate at South St. Paul and Valley Park in Shakopee. To get in and out of South St. Paul trains can use either the ex-Chicago Great Western Robert Street lift bridge or Hoffman Avenue Yard adjacent



Union Pacific across America's Dairyland

Illustration by Otto M. Vondrak. Not all railroads and stations shown. Not an official map. ©2015 White River Productions

to CP's St. Paul Yard. Valley Park trains use the CP Merriam Park Sub between Robert Street and Chestnut Street to connect with the UP Mankato Sub.

Two manifests run daily in each direction across the line. The long-standing MPRSS (Manifest-Proviso to South St. Paul) and MSSPR (Manifest-South St. Paul to Proviso) trains have been replaced by the MADSS (Manifest-Adams, Wis., to South St. Paul) and MSSAD (Manifest-South St. Paul to Adams, Wis.) but the symbols can change any day depending on traffic requirements. MPRVP (Manifest-Proviso to Valley Park) and MVPPR (Manifest-Valley Park to Proviso) also run daily.

Extra trains for sand traffic can run at any time, and a common symbol is MALMCS (Manifest-Altoona to Mason City [Sand]) and MADMCS (Manifest-Adams to Mason City [Sand]) which handle traffic from various mines that is put onto other trains at Mason City. There's also MWNBUS (Manifest-Wisconsin Northern/Norma to Butler, Wis [Sand]). Unit trains run both east and west for mostly southern destinations. Unit sand trains are also delivered to BNSF at East Minneapolis for the Bakken oil fields. Unit coke trains from Roseport, Minn., and fertilizer trains also make occasional appearances.

The Triple Crown RoadRailer trains are the hottest trains on the line. ZCHEM (Intermodal-Chicago to East Minneapolis) arrives at East Minneapolis in the morning hours on Sunday, Wednesday, Thursday, and Friday. ZEMCH (Intermodal-East Minneapolis to Chicago) departs East Minneapolis in the early evening on Monday, Tuesday, Thursday, and Friday. Standard power is two NS d.c.-powered six-axle units but BNSF power often shows up as well.

The yard in Altoona has seen a huge increase in importance in recent years. With the explosion of the sand traffic, UP has been busy adding new tracks and extending current tracks in the yard. The double track between MP 93.3 and Yukon (MP 87.1) has been upgraded to CTC, and yard leads at both ends of the yard have been extended.

A yard job is on duty 24 hours a day with a trim job going on duty at noon daily and a utility job on duty 6:00 a.m. daily. Local LTS72 goes on duty at 3:00 p.m. daily and runs east as far as Black River Falls. LTS81 goes on duty 8:30 a.m. Sunday-Friday to switch local industries including Menards, Veritas Steel, and Alter Metal Recycling. Train LTS82 goes on duty at 7:00 a.m. Monday-Friday and runs west to Menomonie and Hudson. Train LTS83 goes on duty 10:00 p.m. daily and runs to Yukon and up the Chippewa Falls Sub to Norma and back to interchange with WN.

At Adams, LTS71 goes on duty in the afternoon and makes a turn at Merrillan. At 9:00 a.m. Monday and Thursday LTA41 goes on duty and runs from Adams to Wyeville where it gets on the Winona Sub to Tunnel City and then continues west on CP to Winona, Minn. Train LTA42 returns to Adams from Winona on Tuesday and Friday evening. On Wednesday LTA41 runs to Necedah and makes a Wisconsin Rapids turn on the CN Valley Line.

MPRIT (Manifest-Proviso to Itasca, Wis.) and MITPR (Manifest-Itasca to Proviso) also run on the Altoona Sub but only east of Necedah to access the CN Valley Line. Weston coal trains come out of the Chicago area and also get on the CN at Necedah. CN crews deliver the trains to Weston.

The problematic EMD SD9043MACs were commonly used on the Chicago-Twin Cities manifest trains until the fleet was sidelined in early 2013 when it was discovered that many of the units had developed frame cracks. The SD9043MACs were replaced mostly by SD70Ms. Despite Union Pacific trading in 100 SD9043MACs to EMD, the lengthy units are again finding their way back onto the Altoona Sub. Older SD40Ns and various Geeps often appear as they're moved between the Twin Cities and Proviso and the yards in between. Until recently it was common to see former Southern Pacific AC4400CWs on sand trains but standard UP a.c.-traction locomotives now dominate trains. Several SD60Ms work out of Adams on locals but occasionally find their way onto manifest trains.

Minnesota Commercial (MNNR) has trackage rights on the Altoona Sub from St. Paul to Lakeland Junction to reach Andersen Windows on the Stillwater Industrial Lead (which no longer reaches Stillwater). Lakeland Junction is located at MP 18.4, just west of the Hudson Bridge and requires a reverse move for trains coming from the west to enter the lead. Also on the lead is the Allen S. King

BELOW: MSSAD-2 is now off the Altoona Sub as the crew pulls into Adams on March 3, 2013. The lead unit, UP 8074, was built in September 1996, and was the last unit of the second order of SD9043MACs. UP 8074 was also the last SD9043MAC to receive the "We Will Deliver" slogan on the long hood. Just 32 days later, UP 8074 was renumbered to UP 3541, the second to last SD9043MAC in the 8000-series to do so, followed by UP 8056 one day later. The 8074 was one of a block of units that was recently traded in to EMD for new SD70AHs.

TOP: Normally a nocturnal run, ZCHEM-06 is running about 12 hours late due to a derailment and bridge collapse in Illinois. The pair of NS SD70s and 79 RoadRailer trailers are crossing the Chippewa River in Eau Claire on July 7, 2012. The impressive bridge was built for double track and still supports two tracks, with the second being the Yukon siding. Yukon Junction is east of the bridge.

ABOVE: Just east of Humbird three SD9043MACs and a HLCX GP38-2 bounce along the jointed rail as they split the searchlight signals at MP 127.5 on March 3, 2013. After making a 44-car setout, the crew is little over an hour out of Altoona. All 45-cars of this MSSAD-2 will bypass Adams and continue to Proviso Yard in Chicago. These classic wayside signals were removed from service on August 5, 2014.

ABOVE: UP 8248 leads MSSPR-8 with five units and 81 cars across the diamond at Merrillan on January 8, 2013. The former Green Bay & Western line crossing the UP is now operated by Canadian National and has seen an increase in traffic thanks to sand mining.

RIGHT: A CSX SD60 makes a rare appearance on the Altoona Sub leading train MVPPR-30 on December 30, 2012. For the first time since departing Altoona the train has slowed to 30 m.p.h and is rolling on jointed rail just east of Fairchild. The code line still stands proud along the right of way that was once double tracked.

Generating Plant (Bayport) that receives unit coal trains.

The other lead on the Altoona Sub is the Camp Douglas Industrial Lead. The lead joins the mainline at MP 173.8 in Wyeville and extends 9.2 miles to Camp Douglas. This was the original mainline towards Elroy but today is only used for car storage.

Maximum track speed is 50 m.p.h. but more than 70 of the 195 miles has permanent slow orders of 30 m.p.h. or below. Track speeds should increase as UP completes its rail replacement projects along the line.

The Altoona Sub is rarely flat but only exceeds a one percent grade on Knapp Hill, both sides of the St. Croix River valley, and on the double track between St. Paul and Hazel Park, all of which are below 1.5 percent. The rest of the line is full of .5 percent grades in both directions. On the BNSF Midway Sub trains coming out of South St. Paul and Valley Park must overcome a 1.65 percent grade. Bayport coal trains and any underpowered trains use manned helpers out of South St. Paul.

Railfanning the Altoona Sub

Unlike the BNSF and Canadian Pacific mainlines to the south, the Altoona Sub doesn't have dozens of trains every day. Average daily train counts are between five and eight, and only a few of those could run in daylight. Because of this, it's best to find a train and stick with it. The good thing about the Altoona Sub is that it is track warrant-controlled, so the dispatcher is often busy issuing warrants on 160.890 (AAR 52). If all else fails, Altoona is good place to start because there is usually at least one road train in the yard and locals are usually in the area.

The easiest trains to photograph are the eastbound manifests. These trains usually run west of Altoona in darkness and depart Altoona sometime in the morning. During the winter months these trains run in good light for most of the day. The westbounds are less predictable but an eastbound often meets a westbound between Altoona and Adams.

Chasing in Minnesota is difficult due to lack of parallel roads. Access to the St. Croix River valley on the Minnesota side is also limited. On the Wisconsin side, however, there are several places to see eastbounds struggle up the 1.2 percent grade out of the river valley. Highway 12 begins to follow the tracks at Sono Junction and, for the most part, does so until Millston. East of Millston the only road that parallels the tracks for a meaningful distance is Highway 21 from Wyeville to Necedah. East of Wyeville the CP Tomah Sub is relatively close. The ex-Green Bay & Western, now CN, line to East Winona is crossed at a diamond at Merrillan. One of the few remaining depots is located here and is still in use.

The Altoona Sub will sadly lose some of its distinctive character when the jointed rail, active code line, and searchlight signals are all replaced. The future of the Altoona Sub and Adams Line has been questioned in the past but thanks to the sand traffic the line has emerged from the shadows with higher track speeds and more trains, and even the problematic SD9043MACs are returning. Even as the line is upgraded to current standards, the Wisconsin Dairyland feel will always remain as trains pass through small towns such as Woodville and Humbird on the route of the *400s*.

Michael Bargmann, 30, is from Chaska, Minn., and this is his first appearance in Railfan & Railroad. *A lifelong railfan, he enjoys spending his time shooting between Chicago and the west coast.*

ABOVE: Once full of yard tracks, East St. Paul is now nothing more than a place for trains to sit and wait for a chance to get on BNSF. Train MCHVP-01, with the Southern Pacific heritage unit, is doing exactly that on the evening of December 2, 2012. The crew just met an eastbound unit molten sulfur train and will now pull down to Westminster to wait for the light onto BNSF; it will eventually reach Western Avenue, where a new crew will climb aboard and finish the trip to Valley Park.

LEFT: SD9043MAC 8229 is in charge of 154-car MVPPR-16 at Roberts, Wis., on February 16, 2013. The track from MP 23.7 to MP 50.8 is good for 50 m.p.h., and the engineer is taking full advantage of it kicking up quite a snow storm in the process. Thanks to a three-hour delay due to broken rails, this train sat at East St. Paul for most of the night and is making a rare morning appearance east of Altoona.