The BN Expediter

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The official publication of *The Friends of the Burlington Northern Railroad*, the historical society focused on the *Burlington Northern Railroad*, the *Burlington Northern Santa Fe Railway*, the *BNSF Railway and the Montana Rail Link*.

#### Friends of the Burlington Northern Railroad

#### PO Box 271,West Bend, WI 53095-0271 www.fobnr.org

A 501(c)3 Not-For-Profit Corporation Registered in the State of Idaho

The Friends of the Burlington Northern Railroad (**FOBNR**) was formed to gather, preserve, and share information about the history, current operations, and future development of the Burlington Northern Railroad and its successors. It follows the evolution of the railroad from its inception in 1970 with the merger of the Great Northern, Northern Pacific, Chicago, Burlington, and Quincy, and the Spokane, Portland and Seattle Railroads.

The purpose of the **FOBNR** is educational. We wish to perpetuate the history of the Burlington Northern Railroad, its successors and the Montana Rail Link. We seek to collect and preserve any materials which help establish or illustrate the life, conditions, events, and activities of the railroad. We will disseminate this information through the publication of a newsletter, establishment of a web site, by maintaining an archive, and by conducting an annual convention somewhere along the lines operated by the railroad. We may also publish information in other media and may restore and operate historical railway equipment.

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Regular membership is \$25.00/year; Sustaining membership is \$50.00/year; Junior membership (16 and under) is \$10.00/year. The membership year is from January 1 to December 31. *The FOBNR is not supported by, nor affiliated in any way with, the BNSF Railway, its* 

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#### The BN Expediter

The BN Expediter is published four times a year and is included with membership in the **Friends of the Burlington Northern Railroad**. Manuscripts, photographs and information are welcome for publication. Articles are compensated at \$25/page of text; contributors of photos will receive one free copy if an **FOBNR** member, two if not.

Anything published in *The BN Expediter* (including the classifieds), must be focused on the Burlington Northern Railroad, its successors and the Montana Rail Link. Information and/or pictures that give historical perspective or context are acceptable (e.g., premerger road numbers). The disposition of a locomotive, other piece of equipment or property is also acceptable. Further information is available from the Editor.

Send material for publication to either:

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#### **New Members**

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#### **Sustaining Members**

On behalf of our members, the **FOBNR** Board of Directors would like to thank our sustaining members for 2019. Their generous contributions have helped us to continue furthering the goals of our organization.

J Allen Dunlap, III

John Adams James Archer Robert Bach Tom Bentley **Daniel Bergin** Timothy Bernaden Rodney Black William Brown Michael Bruno Jay Burkgart David Burns Kent Charles Gayle Christen Craig Connell Earl Currie Mark Dennis Timothy Dike Randy Doman Vasyl Domashevsky Yannick Dreyer

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**Cover Photo:** The Creston local runs to Red Oak to service industries there and in Shenandoah, which is on a branch line 20 miles southwest of Red Oak. In this photo the local has finished its work and on the main line back to Creston on May 1, 2012. Photo by Craig Williams, used with permission.

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#### The FOBNR Contact Corner

Question 27.1.1 (via email)

I have a question regarding BN F45 #6644. Did this locomotive escape being scrapped? If so what is its current status?

K. J.

A: Robert C. Del Grosso's book, "Burlington Northern Locomotives 1970-1996" has a picture of this very unit on page 180. He lists #6644 as being retired on 2/10/1986 and returned to lessor via Capital Leasing Corporation (GATX) 11/86. From there it was acquired by regional railroad New York, Susquehanna & Western (NYSW) in November 1986 and given #6370.

I then proceeded to the Diesel Shop web site (www.dieselshop.us) and found the NYSW under their regional listings of the northeast. I looked for #6730. It had a number change to #3638 sometime in the middle 1980's. Looking in the notes section, I found that #3638 was sold to Montana Rail Link (date unknown) and renumbered to #390.

The notes line on the web site contains an error about #3638, calling the unit ex-BN #6640. But they list the #6640 in the line above it too. It would appear that someone made a typo on the notes entry for #3638,> nee NYSW #6370, >nee BN #6644.}

The MRL roster at this web site lists #390 as still on the roster as of April 2, 2018. However, as you will see shortly, that is inaccurate.

At Railroad Pictures Archives website I looked for pictures of MRL #390 under Regional Railroads. I found that there were several dozen photographs. One of the last ones was taken by Richard Olson in Airway Heights, Washington with a date on the picture of 9/20/2014. On the site the photographer asked "What's the future for this F45"?

I also sent your question to a couple of FOBNR members, one of whom, Mark Demaline, is the associate editor for The BN Expediter. He knows the MRL well. He replied and said that MRL #390 (>nee NYSW #3638 > nee NYSW #6370 >nee BN #6644) was sent to Western Rail in Washington State for storage. It is owned by a third party and still remains at Western Rail. He has seen a recent photo of it at that location. He also says the other two MRL F45's were scrapped.

I then decided to Google the Western Rail Locomotive Roster and found it located in a PDF at the Trains Magazine web site (trn.trains.com). That document identifies the most recent update as October 2018. F45 #390 is listed in a footnote there as "Stored for private owner". The Trains website says there will be a story about Western Rail in the January 2019 issue of the magazine.

(continued on page 4)

#### 2019 FOBNR Convention **Overland Park, Kansas June 5-8**

Planning continues for another outstanding convention. Headquarters will be at the Hyatt Place Convention Center in Overland Park. We're working on tours of BNSF facilities and will have plenty of time for railfanning this very busy area of the country. There are also plenty of family related attractions in the area, so bring them along!

You can make a reservation at the convention rate (\$111 + taxes) by calling 1-888-492-8847 and mentioning our group as "The Friends of the Burlington Northern Railroad," or by going to our website (www.fobnr.org) and clicking on the reservation link.

More information will be available in the April issue as well as on our website, which will have timely updates as the agenda becomes firmed up.

#### **Board of Directors Election Request for Nominations**

The current terms of office of Peter Ferch, Dave Poplawski and Larry Stephens on the FOBNR Board of Directors will expire at the annual meeting this summer. In accordance with the bylaws of the FOBNR and Board policy, nominations are hereby solicited by March 1, 2019 for candidates for these positions. All positions are for two years.

Any FOBNR member can nominate him or herself or be nominated by another person (the nominee will be contacted and must then accept the nomination). All nominees will be asked to write a short autobiography and a statement of why they should be elected.

A list of nominees, their supporting information, and a ballot will be sent along with the April 2019 issue of The BN *Expediter*. Voting will take place by mail.

All details of the election will be handled by Gary Seymour. Send nominations, or names, addresses and supporting information to him at:

**PO Box 271** West Bend, WI 53095 email: contact@fobnr.org

#### The Denver Zephyr

FOBNR member Dennis Popish informs us that the Burlington Bulletin #55, a publication of the Burlington Route Historical Society, has an article about this train and that there are about 14 pages about as it ran under BN auspices after the merger and until Amtrak took over, including 17 photographs, six consists, and an equipment roster of cars. You can purchase the issue from the society by going to their web page: www.burlingtonroute.com and then going to their company store web page. The cost is \$50.



# **President's Message**

Change is something all of us see on a recurring basis. With this January issue there is the obvious change to 2019. With the forecast of snow as I write this, there is the obvious change of season. Standing on the Highway 10 Bridge in Galesburg and seeing only remote control orange and black SD40-2's doing switching is certainly a change from previous times.

On a personal level we can feel change in our own lives. Late last summer my wife died after fighting all the complications of diabetes for years, and by the time you read this I will have retired after 41 years as a family physician. Certainly my world is a different one from even this summer at our annual convention.

Hopefully, as members of the **FOBNR** you have noted our changes as an organization. In 2018 we rolled out our new logo. This was a process the Board worked on for a number of months and we feel is a very positive step to bring our image into the 21st century.

We also have taken on coverage of the Montana Rail Link as an organization. We hope this is a process that can grow as we get increasing information and material about the spin-off from the BN.

More recently you have probably noticed the new **FOBNR** website, thanks to the work of several people. Gary Seymour was able to lead us to Scott Owens, who offered to help with a refreshing update to the website at a very reasonable cost. Webmaster Dave Poplawski worked with him a great deal on this and has continued to add material to the framework that Scott was able to provide. Hopefully we can continue this process to add content to the website to make it an excellent tool for our membership and a recruiting tool for new members.

We have also seen some new and younger members come into their own in helping the organization. In particular, Ben Hucker has stepped forward to help with the Aurora convention and soon will be taking over the duties with our Company Store.

The other very positive change for the **FOBNR** over the last year has been an increase in our membership from 217 to 238 members, and fully a third of our members are now sustaining members. Continuing this trend would be an excellent start for 2019!

What changes might we see in this coming year? We might get to see some new content and material in the Expediter. On the prototype side, Dave and I recently met on a windy October Saturday and drove over to Peoria and traveled the line to Galesburg, a line which has seen a dramatic decrease in coal moves and may be changed dramatically in coming years. I am now trying to find some old pictures from the line when I lived on it in the 70's and 80's. This is something many of you could do, finding a specific

line and documenting the history and the present use before changes may occur in the future.

As always, we would like to see a change as more people submit material for modeling articles, which are always a hit in the magazine and a plus for the organization. It does not have to be anything earth shattering, simply an attempt to model something BN, BNSF or MRL. Both in prototype and modeling material don't feel that you have to be a perfect writer, simply get us the material and Dave and Associate Editor Mark Demaline would be glad to get it into outstanding print format.

Another change that would be most welcome would be to have some members take positions on the Board. The time commitment is small, attending the annual meeting at our conventions and three 1-hour conference calls throughout the year. Many of us have been on the Board for many years, and as we have seen lately, new Board members with new ideas are a real benefit to the organization.

A change that would be most welcome would be to see more members take advantage of our excellent annual conventions. This year we will be in Kansas City, a location in the central part of the country with excellent transportation options and many activities for members and spouses. The convention costs are certainly a bargain and the opportunities for tours and activities are far beyond what you could accomplish on your own. Please consider this as an option for this coming June.

2019 is now on us, so please join with us in welcoming the changes we hope to see in the coming year.

John Adams

#### The FOBNR Contact Corner (continued)

That does not explain why the Diesel Shop web site still lists #390 on the MRL roster on their site. Perhaps there is another typo or some confusion exists there about its ownership.

So, after all of that, your locomotive appears to have survived at least into the early 21st century. What the private owner has in mind for it remains unknown.

Thanks for asking. It was fun digging around for this information.

Gary Seymour

Have a question? Email it to us at contact@fobnr.org or click on the designated links on our web site: www.fobnr.org. You may also send your question to our mailing address:

> FOBNR Contact Corner P O Box 271 West Bend, WI 53095

We cannot guarantee that we will have an answer immediately at hand, but we will try our best to find one or to refer you to a possible source. Check out our website for more information.



# Over the Top

#### photos by Mark Dennis

We continue our series of photographs of the roof detail of BN locomotives, a recurring feature in *The BN Expediter*. If you have similar photos, please send them in, although I suspect they are pretty rare. The only criteria is that they are taken from close enough to make out clearly all the details.

The photos on this page were taken in 1985 from the employee walkway to the diesel shop building at Northtown yard in November of 1985.

The 1419 is a GP10, former GN 612, built in December of 1950. It was remanufactured at BN's West Burlington, Iowa shops where it got the low nose. BN retired it in June of 1986 and was sold to NRE in March of 1987.

The 4037 (below) is a B30-7A, built in August 1982 and rebuilt in March of 1991. It was retired sometime in the late 1990's.









# Right of Way

## BNSF's Red Oak - Shenandoah (Iowa) Line

by Dave Poplawski, photos by the author (except one) Timetable excerpts from the FOBNR website

On March 2, 1970 (M-Day) Burlington Northern inherited 50.6 miles of track running north and south of Red Oak, Iowa, called the "Red Oak Spurs," according to the excerpt below from BN's Chicago Region employee timetable.

RED OAK SPURS				
Mile Post Location	Station Numbers	STATIONS		
18.9	78218	GRISWOLD		
12.6	78212	ELLIOTT		
8,1	78207	STENNETT		
0.0	20403	RED OAK CTC		
6.6	78106	COBURG		
12.9	78112	ESSEX		
18.2	78119	N&W Crossing (Grade)		
18.8	78119	SHENANDOAH		
25.2	78125	FARRAGUT		
30.7	78130	RIVERTON		
MPH Maximum speed between Red Oak and Riverton, 30 Maximum speed between Red Oak and Griswold, 25 except between M.P. 0.20-M.P. 1.38, M.P. 5.60-M.P. 9.60 and M.P. 18.09-M.P. 18.6215 Red Oak - Over Coolbough Street crossing; Over Highway Crossings at M.P. 1.37, M.P. M.P. 7.28, M.P. 7.32 and M.P. 12.195 Trains handling loaded tank cars and loaded 30 yard air dump cars: Between Red Oak and Griswold				

In the intervening years, timetables refered to the line in several ways. In 1972, it went from being the Red Oak Spurs to an actual subdivision—the 12th Subdivision of the Ottumwa Division, and by then the trackage from Farragut to Riverton had been abandoned (timetable excerpt below from the Chicago Region timetable number 7 dated November 5, 1972).

WE	Rule 6(A)	Station	Mile Post Location	Distance from Farragut	Telegraph Calls	EAS	rwa:	RD
	Y	78125	25.2	0.0		FARRAGUT		
	OUY	78119	18.8	6.4		SHENANDOAH		
	FJKOPQ TXY	20403	0.0	25.5	RO	RED OAK	(CTC)	
	Y	78218	18.9	44.4		GRISWOLD		
RULE 33 IN EFFECT BETWEEN RED GAK AND GRISWOLD AND BETWEEN RED GAK AND FARRAGUT. RULE 37 DOES NOT APPLY. LINE-UP WILL NOT BE ISSUED ON TWELFTH SUBDIVISION. UNLESS OTHERWISE PROVIDED, THE ONLY TRAINS TO OPERATE WILL BE AN EXTRA MONDAY, WEDNESDAY, AND FRIDAY, WHICH WILL NOT LEAVE RED GAK BEFORE 10:01 A.M., GRIS- WOLD, 11:01 A.M., AND AN EXTRA TO LEAVE RED GAK 7:30 A.M. DAILY EXCEPT SUNDAY. FARRAGUT 3:01 A.M., SHENNDOAH 3:30 A.M.								

Things stayed about the same until the Chicago Region Time Table and Special Instructions #1 took effect on April 24, 1983 (for the first time the TT and SI were combined, so they started renumbering at #1 again). The line lost any official name and was simply described as distances from the junction at Red Oak as shown below, which was taken from the middle of the Creston Subdivision station list.

435.2	272.7	STANTON	
442.4	279.9	2 MT B0 To Farragut 25.6 Mi. To Griswold 18.4 Mi.	
448.1	285.6	McPHERSON	

In 1985 the northern end of the line from Elliot to Griswold was abandoned, and in 1986 it was further cut all the way back to northern edge of Red Oak. In 2010 the southern end of the line from Shenandoah to Farragut became unused, bringing us to the current configuration of the line as shown in the Nebraska Division #7 timetable dated April 12, 2010 (top of next page).



_					CTC
		436.7	CP 4367		2MT
			RED OAK		CTC
	20403	443.3	To Shenandoah 20.0	Т	стс
	20409	447.5	McPHERSON		

By 2016 virtually all references to the line have disappears from the timetable. It has no official designation except as two line segments: road segment 92 (Red Oak to Shenandoah) and yard segment 839 (Red Oak). The trackage is now unofficially referred to as the Shenandoah line.

In May of 2018, on my way to Lincoln, Nebraska to do an oral history interview, I stopped for a couple of hours to photograph this line.

BNSF's Creston-Lincoln main line runs essentially eastwest on an elevated embankment through Red Oak. Access to the Shenandoah line begins at this easternmost switch to a mile of interchange trackage (see track diagram at right).



In the photo below taken in July 1992 we see covered hoppers on one of the interchange tracks, the connector beginning its downward slope to the branch line just around the corner, and an eastbound coal train with three C30-7s on the point passing the Red Oak station on the main. The station is no longer in railroad use, having been donated to the community in 1995 and which now houses a WW II museum (photo by Todd Miller, from Mark Demaline's collection). The stub track curving off to the left is no longer there.





The photo below shows the connection track coming downhill to a switch. The left leg of that switch leads to trackage that goes under the main and into Red Oak proper.



I headed next to the end of the line a little north of town. The photo below is looking north from US34, where the track disappears and ends somewhere in the trees. The short siding to the right is used for car storage. There is another short siding a little farther on with a switch facing the opposite direction (see diagram on next page).







The west part of Red Oak is protected from flooding of the East Nishnabotna River by a dike (the east part of town is on higher ground). Access to the protected area is via doors through the dike at several places, as can be seen in the photo on the next page taken looking south from US34. Interestingly, US34 is outside the dike and not protected from flooding from where the photo was taken.



Further south and back into town two major industries, a fertilizer distributor and a farmers cooperative, are served, with plenty of tank cars and grain hoppers on the line and on several sidings. The photo below was taken from 200th Street looking north and the next photo looking south from the same place.



Further south BNSF has a maintenance base on one leg of a wye facing east off the line. This shot was taken from the east end of the wye.



.South of town, just beyond the switch shown in an earlier photo that leads to the main line, the Shenandoah line heads southwest along the river toward the line's namesake town.





First town south is Coburg, where this shot was taken looking north. The siding here was removed around 2006, so trains now just roll through.



Next up on my trip south was Essex, At the north end of town is this building that once upon a time could have been a depot, but now is the office for a large grain elevator located on the other side of the line (photo looking north).



From the south end of town we get a better view of the elevator and its assorted buildings and sidings.



Essex (not to scale) Elevator < to Shenandoah to Red Oak >

The next town south is Shenandoah, but along the way at milepost 15.59 we find a small wooding trestle typical of many crossing small creeks along this line.



I wasn't expecting to see the local that serves the Shenandoah line as I was told it operated the Mondays and Fridays but I was there on a Tuesday. It must have had more work than it could get done in a day, so here it was, parked a few miles north of town. near milepost 16.5, with a cut of tank cars (and a buffer car) destined for the ethanol plant in Shenandoah.



Lo and behold, it had a caboose!





Coming into Shenandoah, the first thing I encountered was this beautifully restored depot. Thinking it was ex-CB&Q, I was surprised to find out it is actually ex-Wabash. It turns out the Wabash had a line that ran southeast to northwest and crossed the BNSF line on the north side of Shenandoah that was abandoned in the 1980's. The depot, which was astride that line a little northeast of the depot's current location, was moved here and is now listed on the National Register of Historic Places. The old Wabash rightof-way is now part of the Wabash Trace Nature Trail.



A little farther into town is another grain elevator with several siding tracks serving its loadout. This is looking south from Ferguson Road,



and then looking back north from West Valley Avenue.



Just a little past the elevator I found the ex-CB&Q depot, now converted into restaurant and micro-brewery. Note the cool old fire engine next to the tracks.



Near the south side of town the tracks cross a small creek on another neat trestle before crossing South Fremont Street and then Airport Road on its way to the ethanol plant, the main reason for BNSF keeping the line to Shenandoah in service. The presence of new ties all along the line would seem to indicate BNSF plans on keeping it going for the forseeable future.



Just across Airport Road is this neat derail, currently set to derail anything coming this way. With the tank cars visible in the distance, perhaps loaded with ethanol, the derail keeps any runaways from heading through town, instead piling them up here at the more sparsely populated south side.



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Finally we come upon the ethanol plant (photo below). There were a lot of tank cars here, filling up most of the two tracks that serviced the plant, and clearly the reason the Shenandoah Line is still under BNSF control. There were also a lot of tank cars stored on a siding along the main (see diagram above and second photo below)

Also in the second photo are a large number of windmill tower assemblies. It would appear that they arrived here by rail and will eventually be trucked to their eventual installation locations and assembled.

And finally, looking southwest from Manti Road is the line that used to go to Farragut, now ending about 200 yards from the grade crossing in the middle of a field (photo at right).

I was blessed to have a beautiful day to document this line, and finding the local parked was a real treat. If it only had been working it would have been perfect!

I tried to find photos of the line in its BN (not BNSF) days with no luck. If you have some, or know someone who does, please contact the me.









# General Electric C30-7s on the BN, AT&SF and BNSF (Part 1)

#### by Jay Glenewinkel

#### HISTORICAL BACKGROUND

In 1954, General Electric (GE) constructed a set of four demonstrator locomotives that were equipped with Cooper Bessemer power plants, for testing over the road. These demonstration units spent considerable amounts of time testing over various railroads. Numbered as 750 A, B, C and D, this demonstrator set consisted of two cab units and two booster (B) units. Units 750 A and B were built as UM12s and had the eight cylinder FVBL-8 engine that was rated at 1200 horsepower. The 750 C and D units were built as UM18s and had the twelve cylinder FVBL-12 power plant that was rated at 1800 horsepower. In October 1959, these four units were rebuilt by GE in Erie, Pennsylvania with a 16 cylinder FVBL-16 engine that was rated at 2000 HP. These former demonstration units became UM20s and were sold to Union Pacific in 1960 and were numbered as UP 620A,B and 621A,B. Union Pacific retired these units in 1963.

In 1959, while the UM units were still undergoing testing, GE built two XP24 demonstrator locomotives that were numbered 751 and 752. These XP24 units would later become U25B locomotives. General Electric's U25B would become the very first Universal-Series locomotives widely sold in the domestic market. Over the next several years, GE would introduce a myriad of U-Series locomotives, including the U30C.

As the 1970s rolled around, America was entering into a period of time that would prove to be stressful and challenging that would include issues which affected the fuel economy in the decades that followed. The energy crisis of 1973 drastically inflated oil prices due to ongoing conflicts overseas in the Middle East combined with the high rates of fuel consumption from vehicles at the time. This resulted in the reduced numbers of fuel barrels that were traded between the nations, thus reducing the amount of fuel available to the public. As a result of this economic disaster, America changed their habits in how they traveled and transported goods.

A few years later, in 1979, saw an even greater spike in oil prices, resulting in a further downturn in the economy that drove the United States into a recession which began in 1980.

The 1970s also brought new challenges to General Electric. The Electro-Motive-Division (EMD) of General Motors introduced their line of Dash-2 locomotives in 1972 which would eventually make the GE U-Series locomotive obsolete. In addition, the Federal Railroad Administration (FRA) and the Environmental Protection Agency (EPA) implemented new regulations regarding fuel consumption, noise levels and emissions.

To solve these issues, GE began developing the New Series locomotives<sup>\*</sup>. This would be implemented in two phases. Phase One was the result of an intensive three-year design and manufacturing program which offered improvements in the quality of GE Locomotives. However, this process was already in progress, as GE had included improvements and refinements to many of its U-Series locomotives that were already in production, but did not effect the overall price of these units. One example was when the New York Central placed an order for the 3000 HP U30B. GE included two 3300 HP U33B locomotives for field testing on the NYC. The "field testing" program had been implemented by GE with the U25B and continued on with other units into the early 1970s.

#### PHASE ONE

In 1975, Specification #3860 was issued by General Electric under the title "1975 Product Improvements" and included the listing of 58 specifications in the GEA-10016 publication, which included the following:

- 1. New platform sump-drain system.
- 2. New braking switch design.
- 3. Easy access to fuel pump motor brushes.
- 4. New self-cleaning primary dirty air outlets.
- 5. High reliability governor plug.
- 6. Longer life cab gauges.
- 7. Blue control card labeled when adjustment required at time of installation.
- 8. Built-in engine barring over device.
- 9. Adequate drains for exterior lights.
- 10. New engine cab door latches provide "positive" locking.
- 11. New hatch latch eliminates damage to fuel lines.
- 12. Lower lube-oil fill mark.
- 13. Cylinder hold-down bolt inserts. (NOTE: This means that inserts were shrunk fit into the engine frame, into which the cylinder hold-down bolts threaded. Previous hold-downs were stud threaded directly into the frame)

\*The New Series was GE's internal designation for what would later come to be known as Series 7, which included the C30-7.





- 14. Dynamic braking grid slag catcher. (NOTE: This catches melted dynamic brake grid material, should this occur due to fault)
- 15. Engine overspeed link redesigned.
- 16. Clean Air supply to increase air compressor filter life.
- 17. Improved oil filtration.
- 18. New turbocharger external air seal arrangement.
- 19. New fuel filter drain valve.
- 20. Improved Gardner-Denver compressors.
- 21. "B" platforms strengthened.
- 22. Engine systems monitor (ESM).
- 23. Improved accessibility to engine governor.
- 24. Setting now included on electrical schematics to assist maintenance personnel.
- 25. New voltage regulator.
- 26. Improved power rectifier panel.
- 27. New control compartment drains.
- 28. Improved fasteners for engine air filter doors.
- 29. Improved accessibility to electric heat blower motor.
- 30. Test points built-in and data provided for maintenance.
- 31. Removable cab heater headers to facilitate core cleaning.
- 32. Alternator/generator improvements.
- 33. High reliability "static" time delay relay.
- 34. Improved power cable labels for quick identification.
- 35. New governor cables.
- 36. New AAR controller slide-out feature.
- 37. New labels to facilitate reverser and braking switch maintenance.
- 38. Addition to cooling system test points.
- 39. Toilet water tank assembly simplified.

Unit 5500, first introduced at the Chicago Railroad Industry Show in 1976, was BN's first of many C30-7 deliveries. Shown here in Springfield, Missouri on February 29, 2000. Photo by Lon Coone, from the Ken Ardinger collection.

- 40. Re-orient air valves for operation safety.
- 41. Instruction plate added to facilitate engine air filter maintenance.
- 42. Teflon tape used at pipe connections.
- 43. Small resistors labeled to aid troubleshooting.
- 44. Bolting ears added to engine air discharge elbows for maximum performance.
- 45. New fluid amplifier gasket material to reduce leaks. (NOTE: The fluid amplifier assembly directs water to and from the radiator cores)
- 46. Inspection of engine bonded rubber drive simplified.
- 47. New fuel booster pump seal for ease of assembly.
- 48. New water pump seal for longer life.
- 49. Two seals on lube-oil filter for longer engine life.
- 50. Engine master rod cap assembly simplified.
- 51. Captive, fast-action fasteners added to control stand access doors.
- 52. Fuel filter tank threaded center tube to eliminate rough weld.
- 53. Longer life cylinder head guide O-rings.
- 54. New engine governor water diaphragm material for longer life.
- 55. Lubrication of engine cross rocker bushings improved.
- 56. New valve springs seat design extends cylinder head life. (NOTE: This was referenced in locomotive manuals as the "Spectacle Style" seat)



- 57. 15-degree intake valves for reduced valve recession. (NOTE: Implemented during the mid-1970s)
- 58. New gasket material for longer life water jumper.

These improvements were applied to the U-Series locomotives two years prior to the announcement of the New Series locomotives and were not implemented exclusively with the New Series Locomotives.

#### PHASE TWO—THE NEW SERIES LOCOMOTIVES

Five significant modifications to the design, along with fifteen additional changes were made to the New Series locomotives. These include:

- 1. The air compressor was removed from the pedestal that supports the radiator fan gear box and relocated to a designated compartment away from the radiator cab.
- 2. The positioning and orientation of the lube-oil filter, lube-oil cooler and engine water tanks was modified and improved.
- The equipment blower was relocated into the radiator compartment (4-axle units only). The U25B, U25C, U28B and U28C locomotives built through early 1966 had their equipment blowers located in the radiator compartment.
- 4. High and low voltage components were placed into two separate control compartments behind the cab, one above the frame and one below the frame.
- 5. GE installed its own version of the AAR Clean Locomotive Cab that included eighteen "significant modifications" to the locomotive cab.

The AAR locomotive controller, GE model KS-108, was used in the GE U-Series locomotives built since 1972, but incorporated improved access and maintenance of the control stand for the New Series locomotives. Other improvements included electric cab heaters as standard equipment and a new toilet compartment was installed behind the cab.

The New Series Locomotives also included fifteen additional equipment modifications. These include:

- 1. Copper power cables relaced aluminum cables.
- 2. Alternator idler gear bearing redesigned with ball bearings, replacing needle bearings.
- 3. Grooveless lower main crankshaft bearings in all engines
- 4. Water header on 12-cylinder engines raised up to match the height of the 16-cylinder engine for improved access to the exhaust manifold.
- 5. Steel alternator slip rings for GTA-11 alternator.
- 6. Electric cab heat.
- 7. Bobbitted crankshaft thrust bearing surfaces (similar to main bearings) for longer life.
- 8. New engine compression release valve design.

- 9. Improved overspeed governor.
- 10. Radiator clean-out panels (NOTE: The small bolted panels under the radiator wings and above the radiator intakes).
- 11. Power diode retention hardware that ensures diodes remain firmly attached to heat sink, ensuring heat transfer and extending life.
- 12. Lexan side windows in cab, impact resistant windows for protection of crews.
- 13. Improved stainless steel lube-oil relief valve seat.
- 14. Winter-summer engine air, a manually positioned damper designed to allow warm engine compartment air to mix into the engine intake air during the winter, to provide more reliable winter operation. The door would be repositioned for summer operation.
- 15. Water and oil piping thermometer for quick temperature verification.

One of the most significant improvements made in the New Series Locomotives was the presence of General Electric's long-running line of 7FDL engines. Compared to EMD's two-stroke 645 engine series, the four-stroke 7FDL-16 power plant in the C30-7 proved to be more fuel efficient with a 16% reduction in the consumption of fuel. Other significant features included the Micro-Sentry wheel-slip system. Early production C30-7 locomotives rode on GSC/GSC-2 trucks while later units rode on Adirondack trucks.

In September 1976, at the Chicago Railroad Industry Equipment show, General Electric displayed Burlington Northern C30-7 number 5500, the very first in the line of New Series Locomotives. This initial C30-7 launched a very successful replacement for the U30C, which had been GE's most popular 6-axle locomotive at the time. The C30-7 eventually would outsell the U30C by more than 200 units.

From 1976 to 1985, a total of 1,137 C30-7 locomotives would be built (this included 50 C30-7A units built for Conrail). A total of 783 units were sold to domestic railroads while the remaining units were exported or constructed in Mexico. At least 71 C30-7 units were assembled at GE's Aquascalientes (Mexico) shops using kits supplied from Erie, Pennsylvania.

Burlington Northern had the largest fleet of C30-7s in the United States, rostering 243 units. Santa Fe amassed a fleet of 157 units while Union Pacific purchased 140 units from July 1977 to October 1980. Meanwhile, eastern carriers were also receiving orders for the new Series-7 locomotives. Norfolk and Western (N&W) received 80 units, Seaboard Coast Line (SCL) received 71 while Louisville & Nashville (L&N) received 44 copies prior to their inclusion with the Family Lines/Seaboard System merger in 1982. Conrail received a small order, taking in only 10 copies of the standard C30-7. Conrail, however, did receive an order for fifty of the 12 cylinder C30-7A units later on.



Even though the EMD SD40-2 outsold the GE C30-7, the new Series-7 locomotives were received remarkably well across the border in Mexico. Most notably was Ferrocarriles Nacionales de Mexico (FNM) who embraced the C30-7 with enthusiasm with the delivery of 305 units. Ferrocarril del Pacifico (FCP) acquired only 26 units which were later inherited by the FNM prior to the consolidation of the two railroads to become Ferromex (FXE) in 1997.

As EMD was rushing to produce its "50 Series" line of locomotives, GE was winning what was then known as the "horsepower race". Due to continuous failures with the GP50s and SD50s, EMD began to suffer crippling losses in sales. For the first time in diesel locomotive history, the C30-7 marked the period in time when GE would outsell EMD.

#### **BURLINGTON NORTHERN C30-7s**

The C30-7 soon became a popular model among the western coal hauling railroads. Coal business in the Powder River Basin in Wyoming was booming and the Burlington Northern was in need of efficient locomotives to meet the demand.

Burlington Northern was the very first U.S. carrier to place orders for General Electric's C30-7 locomotives. The first order was for a single unit, # 5500, builder #41400, in September 1976. This was the very first production model of the New Series (or Series-7) line of locomotives. GE displayed this unit at the Chicago Railroad Industry Equipment show during that same month, showing off the advanced features and improvements in motive-power technology of the time.

A second order for nine more C30-7s was received in December 1976 with the delivery of BN 5501-5509. These units proved to be reliable and efficient and were immediately placed in coal hauling service out of Wyoming. In 1977, BN returned to GE with two more orders for the C30-7. The third order comprised of twenty units and were numbered as BN 5510-5529. The fourth order would soon follow with the delivery of an additional fifteen units and were numbered BN 5530-5544. Both of these orders were delivered to the BN in July 1977.

As carloadings continued to increase, BN placed a fifth order for twenty-two more units in October 1978 and were received as BN 5545-5566. In February 1979, BN received its sixth and sevenths orders for a total of thirty-three more C30-7s which were numbered as BN 5567-5599.

The eighth order for the C30-7 was for a single unit. With the 5500 number series filled, Burlington Northern began placing these newer GE locomotives in the 5000 number series. Seven units of the ninth order was received in

	Burlington No	rthern C30-7 Order	'S
	Road	Builder	Build
<u>Order</u>	Numbers	<u>Numbers</u>	<u>Dates</u>
1	5500	4140	9/76
2	5501-5509	41410-41409	12/76
3	5510-5529	41533-41552	7/77
4	5530-5544	41594-41608	7/77
5	5545-5566	41957-41978	10/78
6	5567-5581	42168-42182	2/79
7	5582-5599	42183-42200	2/79
8	5000	42573	9/79
9	5001-5007	42201-42207	6/79
9	5008-5009	42571-42572	9/79
10	5010-5046	42574-42610	10/79
11	5047-5075	42839-42867	3/80
12	5076-5111	42868-42903	5/80
13	5112-5126	42904-42918	7/80
14	5127-5141	43162-43176	5/81



BN 5508 from the second order of C30-7s in Spokane, Washington on September 9, 1999. Photo by Keith Ardinger.





(above) Brand new BN 5510 (note covered exhaust stack) from the third order in Riverview, Illinois on May 1, 1977. Photo by Phillip Faudi from the Keith Ardinger collection.

(below) BN 5563, from the fifth order, in St Paul, Minnesota on August 30, 1997. Photo by Keith Ardinger.





June 1979 as BN 5001-5007, followed by the lone unit of the eighth order, BN 5000, and two more units from the ninth order, BN 5008-5009, in September 1979.

A tenth order for thirty-seven additional units arrived on the BN in October 1979 as BN 5010-5046.

Twenty-nine more of the now popular GE C30-7 locomotives were delivered in March 1980 as BN 5047-5075. In May 1980, a twelfth order for thirty-six units was received and were numbered as 5076-5111. Still, even more C30-7s would arrive for the BN with the delivery of fifteen units as BN 5112-5126, in July 1980.

Several months would lapse before Burlington Northern took delivery of fifteen additional units from its fourteenth and final order for General Electric's C30-7 locomotive. These final units were numbered as BN 5127-5141 and were received in May 1981.

Burlington Northern purchased a total of 243 C30-7 locomotives from General Electric, the most of any carrier in the United States. These C30-7 units would join BN's fleet of 134 U30C locomotives that worked in revenue coal service as well as in other priority assignments across the system.

#### SANTA FE C30-7s

Over a five year period the Atchison, Topeka & Santa Fe Railway placed a total of seven orders for General Electric's C30-7 locomotives. Numbered as ATSF 8010-8019, the first nine units arrived on the Santa Fe in December 1977.

An additional order for thirty-seven units were delivered between March and June 1978 as ATSF 8020-8057. That same year, in October, a third order for five C30-7s arrived as ATSF 8058-8063.

A forth order for thirty-four units was received in April and May 1979 and were numbered as ATSF 8064-8098. The units were built with two sets of louvers on the equipment access doors.

Delivered between May and June 1980, a fifth order for twenty-three more units were received as ATSF 8099-8122. These units were built with roof-mounted air conditioners, high-mounted air horns and rotary beacons.

The sixth order for twenty-nine C30-7 locomotives were built as "Locotrol" units for service out west and heavy tonnage grain trains. Numbered as ATSF 8123-8152, the even numbered units, 8138-8152, were Locotrol master units while the odd numbered units, 8133-8151, were Locotrol receiver units and often worked as mid-train helpers.



BN 5590, from the seventh order, in Livingston, Montana on September 21, 1980. Photo by Keith Ardinger.





(above) Once the 55xx number series filled up, BN starting numbering new units in the 50xx series. Here's the first one, in Cicero, Illinois on October 30, 1979. Of particular interest, this was BN's 500th locomotive from General Electric, and its delivery was advertised by a big banner hanging from the side of the hood stating that fact. Photo by Jim Buckley from the Keith Ardinger collection.

(below) Just four years later, the same unit was in Denver, Colorado (November 1, 1983) sporting a host of cosmetic changes (mostly paint-related). See if you can spot them all! Photo by Marshall Law from the Keith Ardinger collection.







(above) BN 5003, from the ninth order, in Council Bluffs, Iowa on July 23, 1989. Photo by Bill Kuba from the Keith Ardinger collection.

(below) BN 5017, from the tenth order, in Livingston, Montana on September 21, 1980. Photo by Keith Ardinger.







(above) BN 5068, from the eleventh order, in Burlington, Iowa on April 23, 1994. Photo by Bill Kuba from the Keith Ardinger collection. (below) BN 5111, from the twelfth order, in Portland, Oregon on March 1, 1981. Photo by Keith Ardinger.







(above) BN 5117, from the thirteenth order, in St Paul, Minnesota on August 30, 1997. Photo by Keith Ardinger.

(below) BN 5136, from the fourteenth order, in Minneapolis, Minnesota on May 30, 1981. Photo by Jim Shepard from the Keith Ardinger collection.





In December 1982, Santa Fe received its seventh and final order for thirteen C30-7s as ATSF 8153-8166. The number boards contained black numerals on white backgrounds.

None of the Santa Fe C30-7s were rebuilt. Units 8050 and 8067 were wrecked and later scrapped. Santa Fe units 8015, 8017, 8021, 8023, 8026, 8032, 8035, 8044, 8046, 8053, 8056, 8066, 8072, 8075, 8077-8079, 8084, 8087, 8093, 8095, 8096 and 8123-8152 were traded into GE on an order for B40-8Ws. These units were placed in GE's lease fleet and put into service in the CSX, SP, C&NW and BN. Conrail would later purchase many of these C30-7s from GE and painted them in Conrail blue (without the Conrail logo) and renumbered the units as CR 500-557. By 1977, most of these units were retired from the Conrail roster.

In 1992, the Santa Fe retired an additional 35 more C30-7 locomotives. Though several units finished their careers in their original Santa Fe paint and numbers, only twenty-six units were included into the BNSF roster and would be renumbered to coincide with the former BN number series. These include: 8099-8101, 8103, 8105, 8109, 8110, 8114, 8118, 8120, 8122, 8153-8166.

	BN Units F	lebuilt to C33-	7	
BN	Date	BN	Date	
<u>Number</u>	<u>Rebuilt</u>	<u>Number</u>	<u>Rebuilt</u>	
5047	11/91	5116	8/92	
5048	1991	5118	1992	
5054	7/92	5121	7/92	
5055	11/92	5122	1992	
5056	7/91	5123	10/92	
5058	1992	5125	10/92	
5059	1991	5127	10/92	
5063	4/92	5130	8/92	
5064	9/91	5131	11/92	
5067	8/92	5132	10/92	
5069	12/91	5135	7/92	
5072	9/91	5138	9/92	
5084	7/91	5141	7/92	
5085	10/92	5567	11/92	
5087	5/92	5568	8/92	
5088	12/91	5569	6/92	
5098	1992	5570	10/92	
5099	12/92	5574	8/92	
5101	9/92	5577	4/92	
5106	5/92	5579	7/92	
5111	8/92			

	BN Units I	Rebuilt to C36-	7
BN	Date	BN	Date
<u>Number</u>	<u>Rebuilt</u>	<u>Number</u>	<u>Rebuilt</u>
5057	6/92	5572	9/92
5073	9/92	5576	12/92
5112	10/92	5580	8/92
5571	8/92		

Santa Fe C30-7 Orders					
	Road	Builder	Build		
<u>Order</u>	<u>Numbers</u>	<u>Numbers</u>	Dates		
1	8010-8019	41663-41672	12/77		
2	8020-8057	41687-41724	3-6/78		
3	8058-8063	42080-42085	10/78		
4	8064-8098	42375-42409	4-5/79		
5	8099-8122	42500-42523	5-6/80		
6	8123-8152	43550-43579	5-7/81		
7	8153-8166	44067-44080	12/82		

#### **BURLINGTON NORTHERN C30-7 REBUILDS**

On July 25, 1991, Burlington Northern released its first upgraded C30-7 with BN 5084. The upgrade program was expected to extend the life of the C30-7s by at least five years.

Performed at the shops in Alliance, Nebraska and West Burlington, Iowa (??), the horsepower rating for these C30-7 locomotives was increased to 3300 horsepower. This was done when the "layshaft" or "overspeed link" (as GE called it) was upgraded to the diesel engine and electronic modules, mostly in the excitation cards.

The 752E8 traction motors were replaced with the 752EF model. The rebuilt C30-7s were also equipped with an updated Sentry Wheel-Slip control system. Other minor improvements were also made to the units. These rebuilt units were not repainted, but had red number boards with white numerals installed for identification purposes. The average time to complete these rebuilds was four days per unit. A total of 41 C30-7s were converted to C33-7s, while an additional seven units became C36-7s, as classified by the Burlington Northern. In 1997, the BNSF reclassified these rebuilt GEs as C30-7s once again.

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#### References

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Coming up in part 2 in April: BNSF's C30-7s plus C30-7 dispositions.





(above) BN 5098, a C30-7 converted into a C33-7, in Lynxville, Wisconsin on June 4, 1995. Note the red numberboards. Photo by Craig Williams, used with permission.

(below) BN 5572, a C30-7 converted into a C36-7, in Cicero, Illinois on October 1, 1992. Note that C30-7 is still stenciled on the frame. Photo by Jim Shepard from the Keith Ardinger collection.



**Rear Cover Photo**: Feeling at home on the Joint Line, five C30-7's and a lone SD40-2 power a southbound RPTX coal train near Monument, Colorado on June 18, 1987. The C30-7s are BN 5585 is on the point, AT&SF 8114 and (maybe) 8104, and BN 5033 and 5503. Photo by Mark Demaline.



