Development and Execution of a Comprehensive Second Hand Rail Removal and Sale Program at BNSF

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ABSTRACT

BNSF Railway’s capital rail replacement programs generate over 900 track miles of secondhand rail per year which must then be recovered, relocated, and re-allocated. Between 2014 and 2015 BNSF developed and implemented a strategy to sell the predominance of its relay rail to 3rd party purchasers via a rail pickup program to ensure a timely and rapid removal of all rail from trackside after relay, as well as accurate and detail accounting and reporting of all materials and transactions, with safeguards in place to help ensure compliance with the program. Methods were also developed to coordinate operations with divisions, rail relay gang activities, and provide for local replacement-rail retention, prevent material loss and discrepancies, and verify full project completions. Successful execution of this program has resulted in a safer and cleaner right-of-way while maximizing potential revenue from rail sales.

INTRODUCTION

At BNSF the primary process for recovering rail was done with our own rail recovery units, see figure 1. BNSF used rail recovery units system wide to recover rail on tangent rail relays, while rail relayed on curves was sold on site to multiple rail purchasers with no time commitments or process in place to account for rail. The rail pickup unit recovery program consisted of approximately 300 track miles of rail being recovered yearly which was then shipped to our rail plants for dismantling, sorting and welding, which resulted in approximately 150 track miles of second hand rail to be used for rail relay projects throughout BNSF. After conducting a study on how efficient and cost effective the rail recovery process was working on BNSF, it was determined that the cost of the work trains and crews required to support rail recovering efforts was not very efficient or cost effective. Rail pickup units were also challenged with higher train traffic volumes limiting track occupancy and tie-up locations. Therefore, BNSF made the decision to develop and execute long term contracts to initiate a second hand rail pickup program. The second hand rail pickup program was initiated to allow the sale of rail to 3rd party purchasers while developing a system to track and account for every foot of rail made available for sale.
PROGRAM OBJECTIVES AND PROCESSES

BNSF currently has a 3rd party rail pickup crew working with each capital rail production gang. Rail pickup crews, work directly with each rail gang to help ensure that rail plans assigned are picked up within the 7 day access timeframe, see figure 2. BNSF Strategic Sourcing and Engineering monitor rail plans and rail picked up daily to help ensure that rail pickup crews are completing assigned rail projects. Each rail pickup crew completes and sends out a daily production report for work completed. Their daily production report includes rail production, rail gang number and subdivision being worked, report also includes amount of rail that was cut and stockpiled and plan item associated to that rail, as well as other information such as track and time available, flagging location, delays, etc. Each rail relay project is tracked with a plan item number, which is how we identify the amount of rail being relayed by each rail gang. It is very important for BNSF and our rail pickup program, that all rail production gangs report accurate footage of rail relayed.

Production Reporting

BNSF has also developed a rail production removal report that auto generates 3 times daily and is sent out via email, see figure 3. This report gives the rail purchasers notification of the following: sub division, rail plan, line segment, beginning and ending mile posts, plan quantity, held rail, rail type, rail size, rail gang, production date and production units. This report also lets the rail pickup crews know if the divisions are holding any rail from the projects and the amount of rail being held. This helps ensure the identified held rail does not get picked up and is left for division to re-use. The rail purchaser then measures (wheels) the rail removed to verify the rail gang’s production matches up. If the rail gang production removal report and the rail pickup crew wheeled measurements vary more than 30 ft., an escalation email is sent to determine reason for quantity variance and resolve dispute.
Rail Removal Report Example

Rail Retention

BNSF has also implemented a process for reporting division held rail. The division must report and enter the rail to be held at least 7 days prior to the rail being relayed. This rail must also be marked with the word “KEEP” or “SAVE” every 250 ft. on both sides of the web of rail, see figure 4. This will clearly identify which portion of the rail the divisions want to hold. The secondhand rail team reviews each held rail submission for approval. Also, AVP approval is required if a Roadmaster requests to hold 10,000 LF or more of rail. This helps ensure that large amounts of rail being requested is agreed upon and approved at an AVP level. The held rail portal, see figure 5 was implemented to help ensure that rail being held by division is being identified before rail purchaser starts work on specific projects; account once the rail purchaser cuts or removes unmarked or unreported held rail, BNSF cannot retain the rail.

Figure 3. Rail Removal Report Example

Figure 4. Reporting Held Rail Example

Figure 5. Held Rail Portal
Figure 5. Held Rail Portal Example-  Engineering users enter to hold rail and submit for approval to Second Hand Rail team for review

**Escalation**

BNSF currently requires the rail pickup crews to escalate via email for the following types of disputes: **Access** (purchaser has not cut the rail within 7 days of gang production date), **Quantity** (varies more than 30 ft. from production units), **No Flagman** (no flagging provided), **Reporting** (gang reports to wrong plan item), **Size** (rail base size differs from removal report), **Type** (rail type differs from removal report), or **Held Rail** (division did not request to hold rail).

**Flagging Support**

Best way practice for divisions to provide flagging support is to have a committed flagman assigned to each rail pickup crew. This will ensure that every minute of every day is being fully utilized for picking up rail. Whenever flagging support is not provided or as soon as it is known that flagging will not be provided, an escalation email is sent immediately in order to highlight the urgency for the division personnel to start making arrangements to provide other means for providing flagging support. In most cases the rail pickup crews will try to work within the same track window or in close proximity to the rail gang to fully maximize their track and time. On occasion the rail pickup crews will request weekend flagging support to access rail that was not made available during work week due to, rail gang skips, gangs moving to different subdivisions or needing to close up and complete projects behind rail gangs.

**Stockpiling**

Once the rail purchaser cuts the rail into 40ft. sticks, it’s picked up and stockpiled at a temporary storage location (TSL), which is later moved to a designated storage location (DSL) for load out, see figure 6. Once the rail is cut and picked up, BNSF submits an invoice for each line item, including resolved disputes, for the amount of rail being picked up less BNSF held rail. Once purchaser makes payment, BNSF receives this money into our Like-Kind Exchange (LKE) fund where this money is spent directly into buying brand new rail.
Another bucket of rail removal that BNSF was challenged with and accounting for, was our Prior Year Legacy Rail which was generated prior to 2014. This is rail that had not been picked up or removed from previous years. BNSF had to first conduct a system wide survey, with each division physically going out in the field, measuring and documenting the location and type of rail still remaining on BNSF property. We then compiled the rail information on a spreadsheet along with subdivisions and MP locations of rail that was available to be sold, picked up and removed from BNSF right of way. With nearly 7 million ft of rail identified to be picked up, BNSF began to conduct individual rail pickup purchaser surveys to account for every foot of rail to be sold. These surveys were jointly conducted by the Roadmaster or his designee, and the rail purchaser to ensure that the wheeled amount of rail was verified by both parties. When the rail survey was completed, the spreadsheet was then sent electronically to the BNSF rail group for review and approval. The rail group would then authorize the rail purchaser to begin with rail pickup, see figure 7, which automatically triggered an invoice to the rail purchaser for the amount of rail surveyed. The Prior Year Legacy Rail is also subject to our Like-Kind Exchange (LKE) bucket and is used for buying brand new rail. As of Q1 2016, BNSF has sold approximately 95% of our Prior Year Legacy Rail, with only 86k ft of legacy rail remaining on BNSF. Our goal is to have all legacy rail accounted for and picked up before end of 2016, making our Prior Year Legacy Rail pickup program a success!
CONCLUSION

Thus far our Second Hand rail removal and sale program at BNSF has been very successful making it a “win-win” situation for BNSF, enabling us to verify full project completions, determining held rail by divisions and being able to account for every foot of rail sold or made available to be sold. BNSF has now completed 2 years with our Second Hand Rail program which has resulted in 96% of program rail picked up in 2014 and 99% in 2015. Successful execution of this program has resulted in a safer and cleaner right-of-way while maximizing our value to BNSF.
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History of Second-Hand Rail Recovery

BNSF Second-Hand Rail Recovery Unit Study:
- Inefficient and not cost effective
- High percentage of rail recovered was non re-useable
- Limited Track Time/Tie-up locations

SH Rail Program & Processes

Purchaser Assignment → 1 Pickup Crew Per Rail Gang → Rail Gang Production Report → Purchaser Pickup Crew Production Report

Rail Gang Production Report

Removal Report
- Generates 3x per day to rail purchaser
- Confirms rail production units
- Rail Gang ID number
- Quantity of division held rail

Rail Retention

Held Rail
- Division must request and enter to hold rail at least 7 days prior to rail being relayed
- Must be marked with “KEEP” or “SAVE” every 250ft on both sides of web of rail
- AVP approval required if Roadmaster requests to hold 10,000 LF or more

A held-rail portal was developed for Engineering employees to request to retain rail; each request is tracked and reviewed prior to purchasers starting production.
Escalations

Types of Escalations/Disputes:
- No Flagman Provided
- Reporting
- Quantity
- Held Rail
- Access
- Size
- Type

Flagging Support

- Flagging required for 8 hours on each scheduled gang work day
- Coordinate and plan rail pick-up with rail gang and division work activities

Stockpiling

Rail is cut into 40ft. lengths and stockpiled at temporary storage locations (TSLs), then moved to designated storage locations (DSLs) for load out.

Prior Year Legacy Rail

Legacy rail is any generated before 2014
BNSF surveyed nearly 7M linear feet on its right-of-way and sold approximately 95% through Q1 2016

Conclusion

- BNSF accounts for every foot of rail sold or made available to be sold
- Verify full-rail projects completed
- Safer/cleaner right-of-way
- Maximizing value to BNSF
- Purchase more new rail