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April 19, 2018

BNSF Railway Co.
ALL DIVISIONS

SYSTEM GENERAL ORDER No. 57

TO ALL CONCERNED,

SUBJECT: Air Brake and Train Handling Rules

System General Order No. 55 is canceled.

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Explanation: Effective May 1, 2018
- 101.6 is amended.
- 101.19 is amended.
- 104.12 is amended.
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Amendments to BNSF Air Brake and Train Handling Rules, dated February 1, 2018.
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Effective February 1, 2018

100.13 Running Air Brake Test

A Running Air Brake Test must be conducted for:

The 4th bullet, currently reading:
* All trains prior to descending mountain grades

Is changed to read:
* All trains prior to descending mountain grades as described below

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Effective May 1, 2018

101.6 Locomotive Air Brake Test

That part reading:
References: ABTH 101.13

Is changed to read:
References: ABTH 101.13, 104.12

To the end of the rule, add:
Electronic Alertness Device Test (Alerter)
In connection with the locomotive air brake test when a consist is originally made up, or when the lead controlling locomotive changes enroute, the alerter on the lead controlling locomotive must be tested by allowing the warning timing cycle to expire that results in a penalty application of the locomotive brakes.

Steps for conducting alerter test:
1. Secure the locomotives if necessary.

2. ISOLATION SWITCH must be in the RUN position.
3. Fully release the automatic and independent brakes.
4. Allow the alerter timing cycle to begin.
5. At the end of warning cycle, verify that a penalty brake application has initiated.
6. Immediately recover penalty brake application by placing the automatic brake handle in SUPPRESSION.

Note:
* If penalty brake application does not occur, do not use as a lead controlling locomotive.
* Does not apply to yard switching operations.

Effective May 1, 2016

101.19 Changing Operating Ends

That part reading:
References: ABTH 101.13

Is changed to read:
References: ABTH 101.13, 101.6, 104.12

Under item 2. Steps to Restore Operating Controls, add:
j. If required, test the Alerter as specified in Rule 101.6.

Effective March 1, 2018

Add:

ABTH 102.1.4 Securing a Single Car before Detaching Cars/Locomotives

To prevent uncontrolled movement, a single car must not be left standing when the car can be coupled to and left secured with other equipment.

After performing a single car securement test as outlined below, a single car may only be left standing when:
* Spotting a customer's facility or industry track
* An articulated car is equipped with two hand brakes and both hand brakes are applied and functioning
* In a yard, siding, auxiliary track or facility equipped with derail protection
* Temporarily left on a main track during switching operations
* Mechanical Department has chained the car to the rail

Steps for Conducting a Single Car Securement Test
1. Apply the hand brake on car to be set-out.
   * On cars with more than one hand brake, all hand brakes must be applied.
2. Release or bleed off air brakes.
3. Move the car a sufficient distance to ensure hand brake is operational.
4. After uncoupling is made, observe movement does not occur with the car left standing
5. If necessary, block the wheels or set out a second car.

Effective April 1, 2018

ABTH 102.1.4 Securing a Single Car before Detaching Cars/Locomotives

That part reading:
  * In a yard, siding, auxiliary track or facility equipped with derail protection

Is changed to read:
  * In a yard, siding or auxiliary track

That part reading:
  * Mechanical Department has chained the car to the rail

Is changed to read:
  * Mechanical Department has chained the car to the rail - if determined handbrake is inoperative

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Effective February 1, 2018

102.12 End-of-Train Telemetry System is changed to read:

102.12 End-of-Train Device (ETD)

Effective May 1, 2018

104.12 Electronic Alertness Device

The rule title is changed to read:
  104.12 Electronic Alertness Device (Alerter)

Add the following as the first sentence:
  All controlling locomotives operated at speeds in excess of 25 MPH must be equipped with a functioning alerter.

That part reading:
  An electronic alertness device stops the train with a penalty brake application if the engineer does not respond properly.

Is changed to read:
  An alerter stops the train with a penalty brake application if the engineer does not respond properly.

Effective March 1, 2018

106.1 Regulating Horsepower per Ton (HPT)

Part B. Train Profile Instructions Unavailable/Unknown, the first bullet is changed to read:
  * When outbound isolation instructions are unknown or the Train List or Profile does not indicate scheduled HPT, consider 2.5 HPT as the scheduled HPT and isolate or shut down locomotives to get as close to without going below unless otherwise instructed by dispatcher.

Effective February 1, 2018

106.7 is changed in its entirety to read:

106.7 Speed Reduction for Fuel Conservation
  * If actual HPT exceeds scheduled HPT after isolation instructions are followed, a train may receive additional throttle limiting instructions listed on the Train Profile. These instructions may limit throttle to notch 5, 6 or 7 without going below scheduled HPT.

A Train may exceed the above throttle limitations only when at least one of the following conditions applies:

- Train is a passenger train, or an F symbol freight train
- Train is utilizing GE Trip Optimizer in Auto Control
- Speed is below 15 MPH while on an ascending grade
- Expedited Service Banner appears on the Train Profile
- Verbal instructions received from the dispatcher permitting exemption based on expedited service needs of the train

* Trains must not exceed power throttle 5 when operating at a speed above 50 MPH on any subdivision (5/50).

All non-Z symbols using Trip Optimizer in Auto Control will automatically adhere to power throttle 5 limit when operating at a speed above 50 MPH.

A train may exceed 5/50 only when at least one of the following conditions applies:

- Train is a Z symbol freight train, a passenger train, or an F symbol freight train
- Expedited Service Banner appears on the Train Profile
- Verbal instructions received from the dispatcher permitting exemption based on the expedited service needs of the train

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Effective February 1, 2018

106.9.1 Trip Optimizer/PTC Integrated Mode (TO/PTC-IM)

Under Identification, Step 3., Item b.
The second bullet currently reading:
* TO will only operate in stand-alone mode

Is changed to read:
* TO will only operate in stand-alone mode (ABTH 106.9.2)

Effective February 1, 2018

Add:
106.9.2 Trip Optimizer Standalone Mode

Stand-Alone Trip Optimizer, plans a trip based only on data received during the trip initialization. It does not receive updates or know critical operating information such as signals, track authority or restrictions that are voided/added during your trip.

Perform the following steps when:
* Initializing a new trip
* Engaging Auto Control
* Disengaging Auto Control
* Using Auto Control Through Main Track Divergence

Initialize New Trip
1. Press Trip Optimizer key
2. Press New Trip key
3. Press Yes key
4. Review trip information displayed and if correct, press Accept Trip key

5. Confirm by pressing Yes key
6. If trip information is incorrect, press Reject Trip key

Note: Trained engineers must re-initialize and validate all Restrictions at any crew change including trains relieved in route due to HOS or crew swap.

Train Setup Verification
1. Compare locomotive and train information displayed with train documentation received. If correct, press the Accept key.
2. Confirm by pressing the Yes key.

If Locomotive or Train edits are required, they can be accomplished as follows:

Change Locomotives
Change Locomotives allows a locomotive to be added, removed, or repositioned.

Remove Locomotive: To remove a locomotive, highlight that locomotive and press the Removed Locomotive key.

Add Locomotive: Enter the initials and number of the added locomotive. The default power mode of an added locomotive is Isolated. The default position of the added locomotive is 0. A new position must be entered to save changes to the locomotive consist.

To change the position of any locomotive, highlight that locomotive and use the number keys to enter the correct position.

Note: On DP trains, it is critical that the position of the remote consist is accurately reflected on the Train Setup screen. Location is determined by line number, not Loads/Empties. Verify positioning and edit if necessary.

When all edits are complete, press the Accept key. Train length and axle count will automatically be adjusted in the Train Data.

Change Power Mode
The Change Power Mode screen indicates the running status of each locomotive for the TO system. Power Modes are: DB Only, Running (power and DB cut in), Isolated and DB Cutout.

Use the Down Arrow and Up Arrow to highlight the desired locomotive, then press the appropriate key to change power mode.

When all changes are complete, press the Accept key to save changes and return to Train Setup.
The Cancel key discards all changes and returns to Train Setup.

Change Train Data
The Change Train Data screen allows editing of:
* Railcars/Loads/Empties/Tons/Length/Axles
* Maximum train speed

Use the Up and Down arrows to navigate between items in the train data list. Number keys are used to enter new values for any given train data element. When all train data edits are complete, press the Accept key and TOB will automatically recalculate if necessary.

Note: Accurate train data is critical to system performance. When changes are entered, ensure ALL necessary fields are edited, including maximum train speed. Inaccurate information can lead to poor system performance.

Verify Restrictions
Form A and B restriction information will be displayed once the Train Setup has been accepted. Compare the restrictions displayed with the train documents received. Use the Page Down and Page Up keys if more than one page of restrictions have been received. It is only necessary to verify restrictions for the subdivision(s) the train will actually traverse. Restriction information for subdivisions the train will not traverse may be accepted without verification.

1. If all restrictions are correct, press the Accept key. (Otherwise, press the Reject key and exit.)
2. Press Yes key to confirm.
3. Press Start Trip key.

Note: Trained engineers must re-initialize and validate all restrictions at any crew change including trains relieved in route due to HOS or crew swap.

Track Selection
Once Initialization is complete, the rolling map will appear and the system will prompt for current track. Select the appropriate track to continue. When a train is initialized on other than main track, the appropriate track may not be listed. Select the main track option that the train will occupy upon entering the main.

Engaging Auto Control
When train speed is above 12 mph, the Auto Control Available message is displayed. Only when operating conditions are favorable, Auto Control may be engaged as follows:

1. Press Auto Control key.
2. Within 30 seconds, move the throttle handle to N8.
3. Auto Control Active message will display and the auto notch box appears below the throttle box.

Favorable operating conditions are defined as:
1. Entire train is on a main track.
2. Proceed authority:
   a. Signaled Territory more favorable than approach medium indication. *
      *See auto thru divergence section
   b. TWC Territory - valid track warrant >2 miles ahead of current location.

Disengaging Auto Control
1. Move the throttle to match the Auto Notch position. This will immediately reinstate Manual Control.
   OR
2. Press Manual Control key.
3. During the 30 second countdown, move the throttle to match the Auto Notch position as directed.

Auto Through Divergence
When approaching a main track divergence, approximately 1500ft before the approach signal, TO will prompt TRACK INFO NEEDED AHEAD. If a diverging route is selected, AUTO ACTIVE CALCULATING will appear. Once the

calculations are complete, the rolling map and plan will update to accommodate the diverging route. The prompt will then display AUTO CONTROL ACTIVE.

If the system calculates that it cannot complete the diverging route in auto, TAKE MANUAL CONTROL NOW will appear.

NOTE: Auto control may be maintained when the train is performing a "main to main" diverging move. Under these circumstances, TO can remain in auto control on a signal indication of approach limited, advance approach or approach medium into a diverging clear.

Effective February 1, 2018

Glossary

Horsepower Per Trailing Ton (HPT) is changed entirely to read:

Horsepower Per Trailing Ton (HPT)
The total horsepower of all working locomotives divided by the total trailing weight of the train and isolated/inoperative locomotives in tons. For example, a train powered by 15,000 horsepower and a train weight of 4,285 tons with two isolated locomotives weighing 400 tons has a 3.2 horsepower per trailing ton ratio. (15,000 HP divided by 4,685 tons).

GENERAL ORDER(S) IN EFFECT

| 2,27-28,32,37,39-41,49,53-54,56-57 |

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