



NTSB National Transportation Safety Board

*Office of Railroad, Pipeline &
Hazardous Materials Investigations*

**Collision Between Two
BNSF Railway Company
Freight Trains Near
Gunter, Texas
May 19, 2004**

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- Over 4000 staff work hours

Parties

- Federal Railroad Administration
- BNSF Railway Company
- Brotherhood of Locomotive Engineers and Trainmen
- United Transportation Union





← NORTH

- SOUTH →

Sherman

Dorchester

Prosper

Hebron



Not to Scale

← NORTH

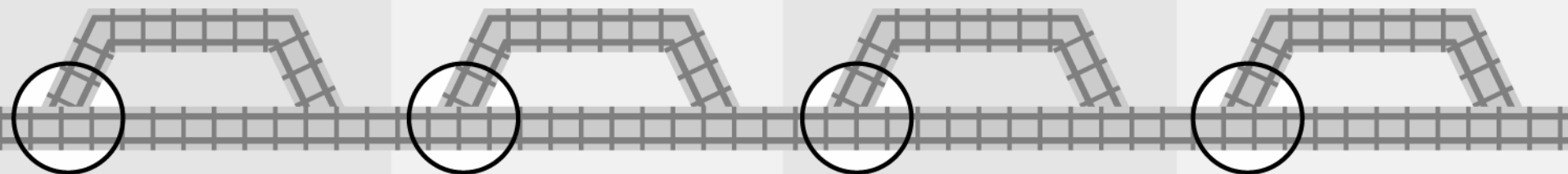
SOUTH →

Sherman

Dorchester

Prosper

Hebron



NORTH SIDING SWITCHES

Not to Scale

← NORTH →

← SOUTH →

Sherman

Dorchester

Prosper

Hebron



SOUTH SIDING SWITCHES

Not to Scale

← NORTH

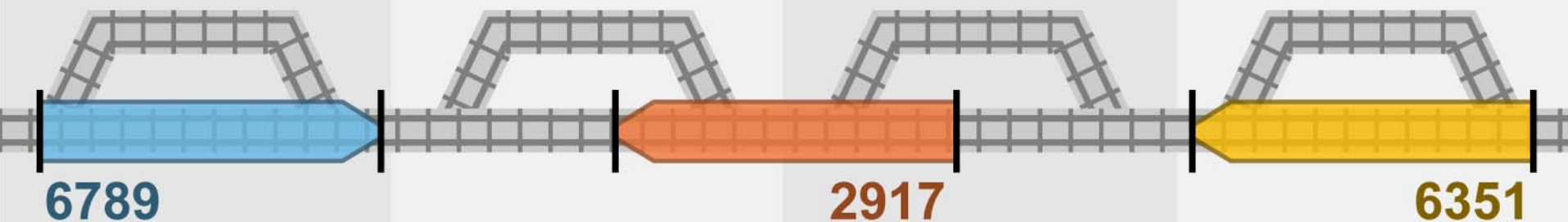
→ SOUTH

Sherman

Dorchester

Prosper

Hebron



AUTHORITY LIMITS

Not to Scale

← NORTH

SOUTH →

Sherman

Dorchester

Prosper

Hebron



6789

2917

6351

TRAINS

Not to Scale

← NORTH

SOUTH →

Sherman

Dorchester

Prosper

Hebron



Not to Scale

← NORTH →

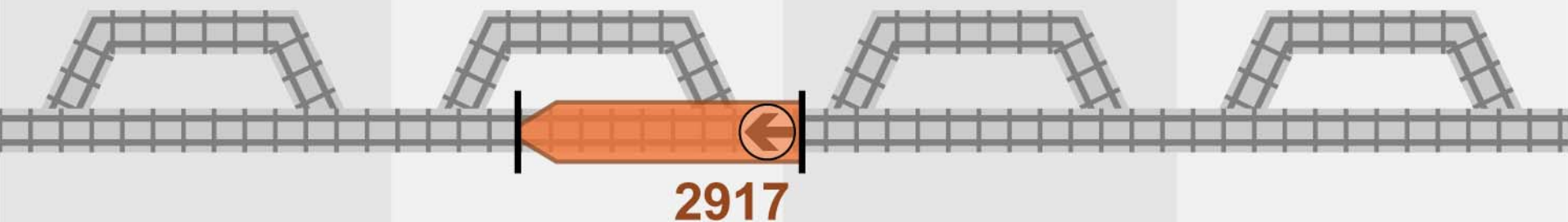
← SOUTH →

Sherman

Dorchester

Prosper

Hebron



Not to Scale

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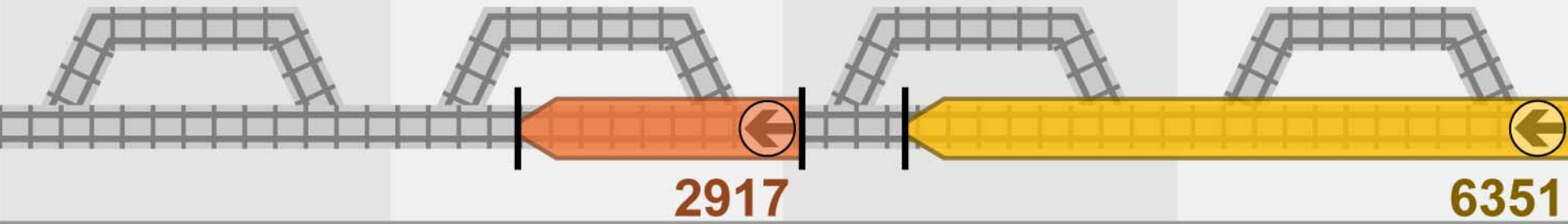
SOUTH →

Sherman

Dorchester

Prosper

Hebron



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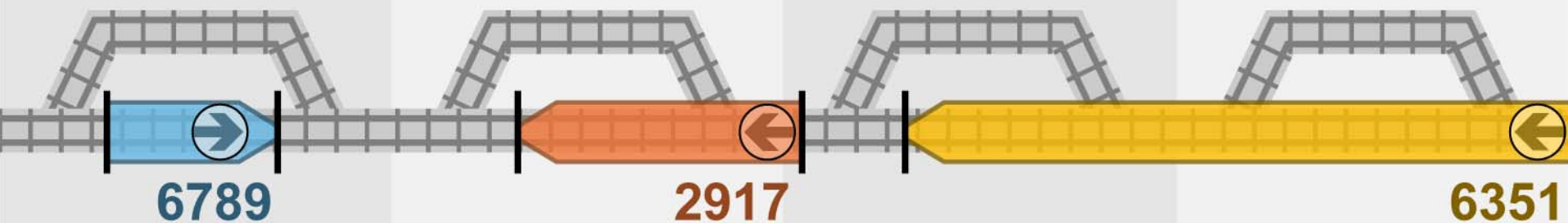
SOUTH →

Sherman

Dorchester

Prosper

Hebron



Not to Scale

← NORTH

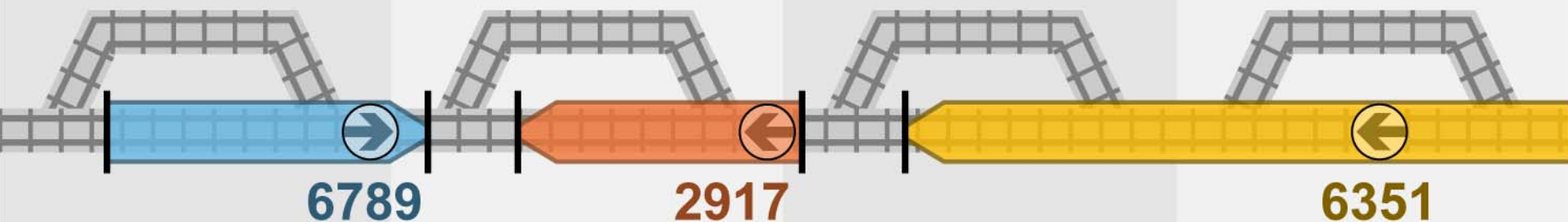
SOUTH →

Sherman

Dorchester

Prosper

Hebron



Not to Scale

← NORTH

SOUTH →

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Dorchester

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← NORTH

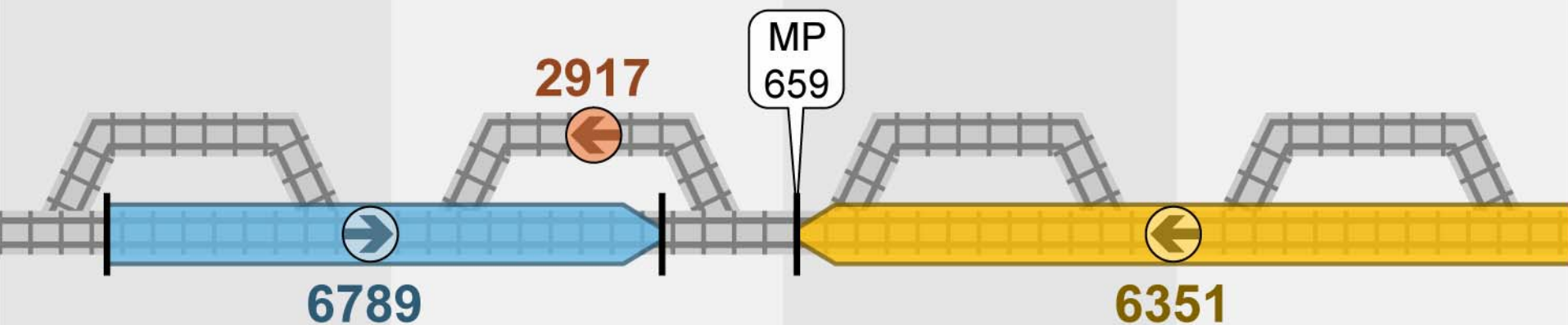
SOUTH →

Sherman

Dorchester

Prosper

Hebron



MP
659

2917

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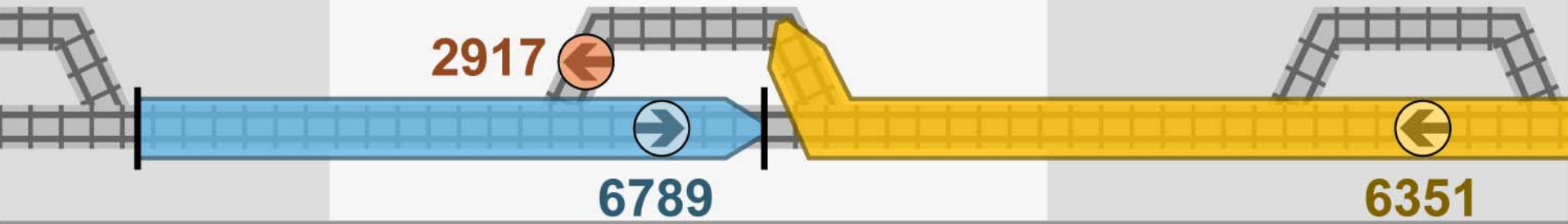
← NORTH

- SOUTH →

Sherman

Dorchester

Prosper



Not to Scale

← NORTH

- SOUTH →

Sherman

Dorchester

Prosper



Not to Scale

← NORTH

- SOUTH →

Sherman

Dorchester

Prosper



Not to Scale

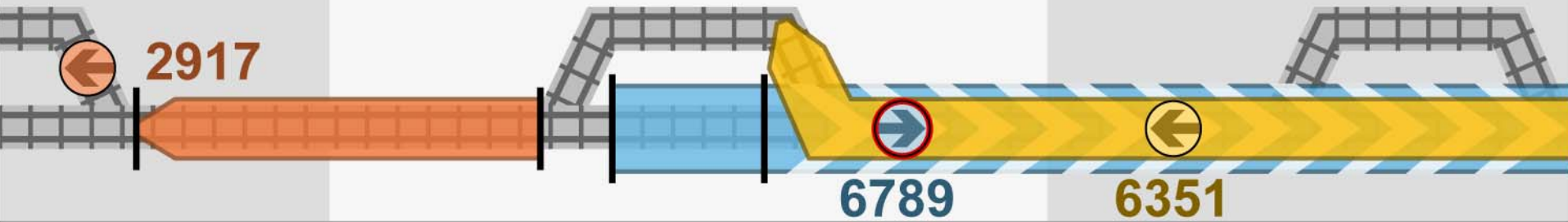
← NORTH

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Sherman

Dorchester

Prosper



Not to Scale

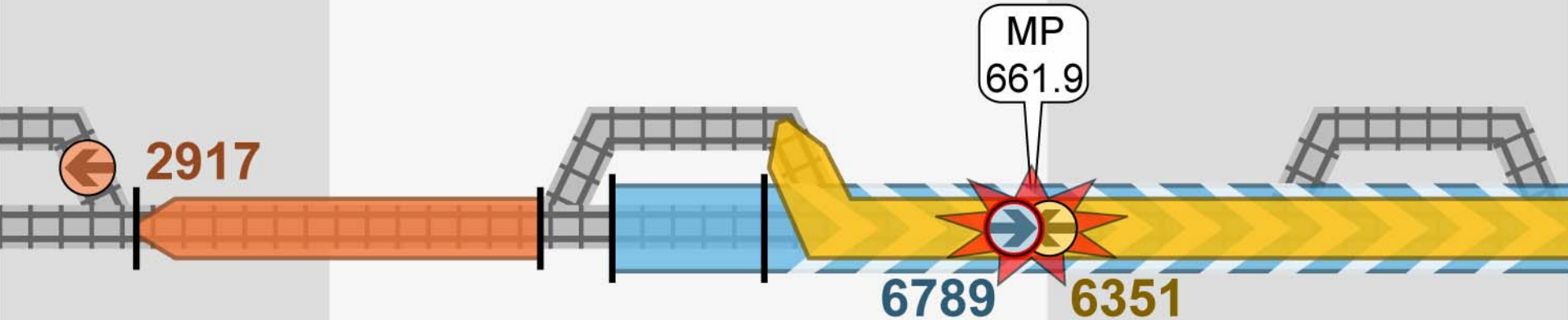
← NORTH

- SOUTH →

Sherman

Dorchester

Prosper



Not to Scale



Courtesy of Dallas Morning News



Issues Discussed

- Informal communication of proposed meeting points
- After-arrival track warrants in dark territory



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Human Performance



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Communications Between the Dispatcher and the BNSF 6789 South Train Crew

Track Warrant Rules

- Identify trains by:
 - railroad initials
 - engine number
 - direction

- Southbound train:
 - BNSF
 - 6789
 - South

Nicknames

BNSF 6789 South

Doni Rock

Doni Madill

Doni Train

BNSF 2917 North

641

641 Job

Sherman Switcher

Road Switcher

BNSF 6351 North

Sherman Rock

Sherman Rock Train

Sherman Clark Rock
Train

Am Rock

Rock Train

Dispatcher Communications with the BNSF 6789 South

“I’ll roll up the **641 job** and have you meet them at Dorchester is what’s going to be.”

Dispatcher Communications with the BNSF 6789 South

“**Sherman Switcher** is gonna clear up for you, and we’ll just take you to Prosper to meet the **Sherman Clark Rock Train...**”

Dispatcher Communications with the BNSF 6789 South

“...you’re going to hold there till the **Sherman Rock**, excuse me, until the **Sherman Switcher** clears up at Dorchester. Then I’ll take you guys on south to Prosper to meet the **Sherman Rock Train**.”

BNSF 6789 South Final Track Warrant

- BNSF 6789 South crew was issued their final track warrant at 5:39 p.m.
- Proceed to Hebron **after arrival** of the BNSF 6351 North.
- BNSF 6789 South proceeded south without waiting.

BNSF 6789 South Crew's Decision to Prematurely Depart Dorchester

- BNSF 6789 South crew was informed on four occasions they would meet one train at Dorchester.
- Referred to as the “641 job,” the “641,” and the “Sherman Switcher.”
- Never referred to by its engine number and direction.
- Crew expected to meet one train at Dorchester.

BNSF 6789 South Crew's Decision to Prematurely Depart Dorchester (con't.)

- BNSF 6789 South was also informed on two occasions that beyond Dorchester they would meet a second train.
- Referred to as the “**Sherman Clark Rock Train**” and the “**Sherman Rock Train.**”
- Not told of the change in plans.

Conclusion

Had the dispatcher routinely referred to the trains by their engine numbers - the identification mechanism required in mandatory directives - it would have reinforced the need to verify engine numbers when the trains met.

Conclusion

Informal communications between the dispatcher and train crews regarding authority limits, train names, and meeting or stopping points may lead to misunderstandings and errors.



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Operations

Track Warrant Control

- Verbal directives
- After arrival, mark Box 7 on form
- Cannot move until after arrival of specific train
- Visually confirm engine number
- Confirm location by radio number

After-Arrival Track Warrants

- Issued in advance of train movement
- Mandatory compliance
- Errors can lead to conflicting movements

TRACK WARRANT

No: 3598 Date: 5/19 2004

To: BNSF 6789 South At: MP 657 (on Mod. 11 Subdiv

- 1 Track Warrant No 3593 is void
- 2 Proceed from M 657 to Ham on MAIN track
- 3 Proceed from _____ to _____ on _____ track
- 4 Work between _____ and _____ on _____ track
- 5 Not in effect until _____
- 6 This authority expires at: _____
- 7 Not in effect until after arrival of: 2 DP 26251. north
South SS Dor Chester at _____
- 8 Hold main track at last named point.
- 9 Do not foul limits ahead of: _____
- 10 Clear main track at last named point
- 11 Between _____ and _____ make all movements at restricted speed. Limits occupied by train
- 12 Between _____ and _____ make all movements at restricted speed. Limits occupied by men or equipment
- 13 Do not exceed _____ MPH between _____ and _____
- 14 Do not exceed _____ MPH between _____ and _____
- 15 Flag protection not required against following trains on the same track.
- 16 Track Bulletins in effect: _____
- 17 Other specific instructions: (joint with) _____
- 20 Be prepared to stop at following switch(es) until known to be in normal position:

21 Permission to leave following switch(es) in reverse position:
SS 5 Dor

This warrant has 3 boxes marked: 2 7 20

OK 1739
Relayed to _____
Limits reported clear at _____

Dispatcher whm
Copied by Smith
By _____



TRACK WARRANT

No: 3598 Date: 5/19 2004

To: BNSF 6789 South At: MP 657 (on Mod. 11) Subdiv

- 1 Track Warrant No 3593 is void
- 2 Proceed from ~~MP 657~~ to Her on MAIN track
- 3 Proceed from _____ to _____ on _____ track
- 4 Work between _____ and _____ on _____ track
- 5 Not in effect until _____

6 This authority expires at: _____

7 Not in effect until after arrival of: 28P 26251 North
South SS Dor Chester

- 8 Hold main track at last named point.
- 9 Do not foul limits ahead of: _____
- 10 Clear main track at last named point
- 11 Between _____ and _____ make all movements at restricted speed. Limits occupied by train
- 12 Between _____ and _____ make all movements at restricted speed. Limits occupied by men or equipment
- 13 Do not exceed _____ MPH between _____ and _____
- 14 Do not exceed _____ MPH between _____ and _____
- 15 Flag protection not required against following trains on the same track.
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20 Be prepared to stop at following switch(es) until known to be in normal position: _____

21 Permission to leave following switch(es) in reverse position:
SS 5 Dor

This warrant has 3 boxes marked: 2 7 20

OK 1739
Relayed to _____
Limits reported clear at _____

Dispatcher whm
Copied by Smith
By _____



After-Arrival Track Warrants

- Accurate communications
- Absolute compliance
- No real time location information

Previous Accidents

- Smithfield, West Virginia - 1996
- Devine, Texas - 1997
- Clarendon, Texas - 2002

Recommendation R-98-27

- Advised FRA to permanently discontinue the use of after-arrival orders in non-signaled territory.
- Closed – Unacceptable Action

Conclusion

Had the FRA required railroads to permanently discontinue the use of after-arrival orders in dark territory as advised in Safety Recommendation R-98-27, this accident would not have happened.



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