



**NATIONAL RAILROAD PASSENGER CORPORATION
NORTHEAST CORRIDOR
NEW YORK - WASHINGTON**

**SUPPLEMENTAL BULLETIN ORDER NO. 8-21-a (PW, WT, PH Lines)
EFFECTIVE 12:01 AM, Thursday, April 23, 2020**



This BO is issued supplemental to BO NYW8-21 and will remain in effect until canceled.

Unless otherwise indicated, modifications in this BO are indicated by ~~strike through~~ (deletions) and dotted underline (additions).

All following instructions are effective 12:01 A.M. Monday, April 27, 2020

I. Main Line: Philadelphia to Washington (PW)

A. 591-P1. I-ETMS Territory

PTC Rules 580 through 590 and all I-ETMS related Special Instructions are in effect on all main tracks and controlled sidings between northern limits of Phil interlocking and CP Avenue.

The controlling engine of all MARC Penn Line and NS trains **authorized by 592-S2 to operate** in this territory must be equipped with on-board I-ETMS apparatus that is cut in and initialized, except when system becomes inoperative, or when hauled by an engine exempted in S.I. 580-S2.

II. Main Line: Washington Terminal (WT)

A. 591-W1. I-ETMS Territory

PTC Rules 580 through 590 and all I-ETMS related Special Instructions are in effect on all tracks between CP Avenue and K Signal Bridge.

The controlling engine of all MARC Penn Line and NS trains **authorized by 592-S2 to operate** in this territory must be equipped with on-board I-ETMS apparatus that is cut in and initialized, except when system becomes inoperative, or when hauled by an engine exempted in S.I. 580-S2.

III. Main Line: Philadelphia to Harrisburg (PH)

A. 591-G1. I-ETMS Territory

PTC Rules 580 through 590 and all I-ETMS related Special Instructions are in effect on all tracks between Frazer and Division Post.

The controlling engine of all NS trains **authorized by 592-S2** to operate in this territory must be equipped with on-board I-ETMS apparatus that is cut in and initialized, except when system becomes inoperative, or when hauled by an engine exempted in S.I. 580-S2.

IV. System Instructions

A. 591-S1. I-ETMS Positive Train Control System

A. GENERAL

I-ETMS (Interoperable Electronic Train Management System) is a Positive Train Control System (PTC) that uses GPS and communication-based system to enhance the safety of train operations. It does not authorize train movement.

I-ETMS will automatically apply the brakes of an equipped train if the engineer fails to take proper action to comply with system information.

I-ETMS Special Instructions supplement Positive Train Control (PTC) Rules 580-590 and apply only where designated by Timetable or Bulletin Order.

Train crews are required to conduct a safety briefing at the beginning of each tour of duty regarding I-ETMS equipment on their train and the I-ETMS territory traversed on the trains route.

Passenger trains with operative I-ETMS will be governed by Train Type "C" speeds.

B. DEFINITIONS

Restricted Mode - A mode where the only function provided by I-ETMS is enforcement of the maximum speed indicated on the I-ETMS display.

I-ETMS Equipped – A locomotive equipped with an operable I-ETMS system.

I-ETMS Inoperative – A condition when I-ETMS is not providing enforcement while occupying designated limits. This includes when the system is disengaged, failed, cutout or the controlling locomotive is not equipped.

B. 592-S1. Trains Equipped with I-ETMS Apparatus

1. Trains equipped with and **authorized to operate** in I-ETMS territory must have I-ETMS cut in and initialized for the direction of movement and are governed by all PTC and Amtrak related Special Instructions.
 - a) When taking charge of a train in I-ETMS territory, or before entering I-ETMS territory, the train must not depart until the engineer confirms:
 - (1) The Cab Signal and ATC/LSL systems are tested and cut in
 - (2) The I-ETMS circuit breakers and cut out switches are in the appropriate position.
 - (3) The I-ETMS system on the controlling locomotive is initialized.
 - b) At the completion of the trip, the engineer must log out of I-ETMS unless authorized by proper authority or special instruction.
2. The Clearance number will be 8 digits in length, using a predetermined number format.
3. When selecting the Amtrak Train ID during initialization, the train ID selected should correspond to the predetermined train/clearance number association.
4. In the event a train authorized to operate with I-ETMS experiences issues with the Amtrak clearance number provided, contact the appropriate Amtrak movement office to receive a new clearance number.
5. The following trains are **authorized to operate** with I-ETMS:

Railroad	Amtrak Line	Train Service	Train No.	Clearance No.
Norfolk Southern	PW	Thru Freight/ Road Switcher	None	None
Norfolk Southern	PH	Thru Freight/ Road Switcher	H21	01673003
			H22	01683003
MARC	PW	Commuter/Passenger	None	None

*Future trains will be added

C. 592-S2. Criteria for Determining Inoperative I-ETMS

a) I-ETMS will be considered inoperative if any of the following conditions occur:

1. The controlling locomotive is not equipped or the I-ETMS system is cut out using “cut out key” on the onboard display.
2. I-ETMS system fails to initialize.
3. Fails to transition to the ACTIVE state when entering I-ETMS territory.
4. Fails to transition to the ACTIVE state after having been initialized in I-ETMS territory and the locomotive has moved more than 100 feet.
5. Transitions from the ACTIVE state to another state for 30 seconds or more while in I-ETMS territory, other than due to engineer logoff or entering Restricted Mode for work events.
6. One or more ONBOARD DISPLAY device(s) is not intelligible or dark.
7. System fails to sound an audible indication in conjunction with a visual warning.
8. ONBOARD DISPLAY displays track conditions that do not conform at block or interlocking signal locations.
9. ONBOARD DISPLAY displays track conditions that do not conform to an Authority, ~~Track~~ Bulletin, or Timetable speed limit.
10. The penalty brake switch is cut out.
11. Any part of the I-ETMS system is damaged.
12. Trains that experience a cab signal, ATC, Automatic Train Stop or LSL failure

b) If I-ETMS becomes inoperative, the Engineer must take the following actions.

1. Cut out the I-ETMS system using “cut out key” on the onboard display.
2. Unless otherwise restricted, operate according to track and signal speed limits, not exceeding the following:
 - (a) Trains with Operative CSS, Speed Control, and Automatic Train Stop:
 - In ABS territory with operative CSS: 110 MPH between Philadelphia and Harrisburg, and 125 MPH between Philadelphia and Washington.
 - (b) Trains with Inoperative CSS or Speed Control or Automatic Train Stop:
 - In ABS territory with fixed automatic block signals: Movement is governed by NORAC Rules 554 and 556.
 - In ABS territory where cab signals are used without fixed automatic block signals: Movement is governed by NORAC Rules 562 and 563.
 - (c) In Non-Signaled DCS Territory:
 - Movement is governed by NORAC Rule 401.
3. Immediately notify the conductor and train dispatcher
4. If the I-ETMS system has failed or cannot transition to Active state prior to entering I-ETMS territory, the reason for failure, if known, must be communicated to the Train Dispatcher.

D. 593-S1. I-ETMS Qualifications for Amtrak Employees

Only qualified Train Service and Student Engineers may operate trains with operative and cut in I-ETMS equipped trains.

E. 594-S1. I-ETMS Operations

1. Restricted Mode

Prior to performing work events requiring return movements, set outs, and pick-ups, the engineer must place the PTC System in Restricted Mode. While operating in Restricted Mode, all movements must be made at Restricted Speed. After the work events are completed and prior to departing the location, Restricted Mode must be turned off and exited. Upon exiting Restricted Mode, the engineer must update the onboard consist information, , track selection, and timetable direction in order for the PTC System to resume an active state.

2. Entering I-ETMS Track

The following tasks must be performed when entering I-ETMS Track:

a) From Non-I-ETMS Track

- Train should be located within 1,500 feet of main track authority limit or signal governing movement onto I-ETMS track
 - Operating at 15 MPH or less
 - Select current track location (Unless otherwise restricted, train speed may be increased immediately after track selection).
- (1) Track Selection must be made prior to entering I-ETMS Track, unless modified by railroad operating rules:
- (a) WT Line: Northbound trains departing Washington must select track location AFTER the leading end of train movement passes “J” Signal Bridge and BEFORE passing “K” Signal Bridge.

b) Between Signals at a Hand Operated Switch

- Train should be stopped between 500 and 1,500 feet of I-ETMS track entry location (or close enough for system prompting without fouling the switch)
- Receive verbal authority from train dispatcher to enter the main track.
- Acknowledge the Enter Main Track prompt on the onboard system display
- Verify switch position.

3. Enforcement

If a train experiences an I-ETMS enforcement, the engineer must immediately **notify** the dispatcher before resuming movement and provide:

- the controlling locomotive initials and number,
- time and MP location where enforcement was initiated
- the reason for enforcement, if known.

Freight Trains with 15 operative brakes or less must not actuate the locomotive brakes once an enforcement braking action has been initiated by the I-ETMS system. If the independent brake is initially bailed off, it must immediately be reapplied, bringing the movement to a safe and immediate stop.

4. Operative Brake Limitations

PTC must not be initialized on any train with more than 5% of the train air brakes inoperative. When changes occur en-route that increase the number of inoperative train air brakes to 5% or more, the engineer must use the “cut out key” on the onboard display of the PTC system and notify the train dispatcher.

5. I-ETMS Operations with Cab Signals

If I-ETMS becomes inoperative, Cab Signal System operating rules and special instructions remain in effect. .

6. Consist Data

I-ETMS consist data must reflect accurate train make-up. Consist discrepancies or consist anomalies that prevent system initialization must be reported to the dispatcher and respective tenant railroad for correction.

When initializing, or when taking charge, and after any pickups or setouts, the engineer must:

- a) Review the consist data displayed by the I-ETMS system.
- b) Correct the consist data displayed, if inaccurate.

Train consist may be modified on the I-ETMS system display, per Operating Rules.

Freight Trains: Engineers operating freight trains must modify the Equipment Speed field in the consist message summary to match territory maximum authorized speed of the train before entering Amtrak I-ETMS territory.

The following equipment parameters must be used for train consist modifications if performing any pick-ups, set outs or if PTC consist data conflicts with the actual train consist during system initialization:

Note: The Amtrak Commuter Operations Center must be contacted to receive equipment parameter data if private cars or equipment not listed is picked-up or set-out enroute.)

Vehicle Class	Type	PUSH PULL Car Numbers	Length	Weight	MAS [mph]
MARC					
Locomotive	MP36PH-3C	10-35	68'	140 tons	90
Locomotive	SC-44	80-87	72'	135 tons	125
Locomotive	GP39H-2**	70-75	59'	134 tons	90
Locomotive	GP40WH-2	68	63'	140 tons	100
Locomotive	GP40PH-2	4145	63'	142 tons	100
Locomotive-Electric	HHP-8	4910-4915	67'	111 tons	125
Bombardier					
Cab Car	MARC IV CAB	8045-8059	85'	81 tons	125
Coach	MARC IV Trailer	8000-8033	85'	78 tons	125
Coach	MARC IV Special	8090-8094	85'	80 tons	125
Kawasaki					
Cab Car	MARC III CAB	7845-7858	85'	80 tons	125

Coach	MARC III E&H	7890-7896	85'	79 tons	125
Coach	MARC III Snack	7870-7876	85'	80 tons	125
Coach	MARC III Trailer	7800-7834	85'	80 tons	125
Sumitomo					
Coach (Furnished as Cab)	MARC IIA CAB	7745-7749	85'	60 tons	110
Coach	MARC IIA Trailer	7700-7708	85'	58 tons	110
Coach (Furnished as Cab)	MARC IIA CAB	7750-7751	85'	60 tons	110
Coach (Furnished as Cab)	MARC IIA CAB	7753-7756	85'	60 tons	110
Coach	MARC IIA Bike	7710-7713	85'	52 tons	110
Coach	MARC IIA Trailer	7714-7715	85'	58 tons	110
Cab Car	MARC IIB CAB	7757-7762	85'	60 tons	110
Coach	MARC IIB Trailer	7716-7719	85'	58 tons	110
Coach	MARC IIB Trailer	7721-7725	85'	58 tons	110
Coach	MARC IIB E&H	7791-7799	85'	59 tons	110
Coach	MARC IIB Trailer	7726-7735	85'	58 tons	110

7. Isolate Marc Locomotives

All locomotives must be shown in the RUN position in the I-ETMS Consist Summary display unless the locomotive is physically isolated for any reason. If a locomotive is physically isolated, it must be modified in the I-ETMS Consist Summary display. To ensure the system braking calculations are accurate, an additional car must be added to the LOADED CAR count and the weight of the isolated locomotive added to the TRAILING TONNAGE value.

8. Comparison of I-ETMS Display Information

Before departing, crew members on the controlling locomotive must compare information such as restrictions, and authorities shown on the I-ETMS display with those in their possession. When a crew member receives a mandatory directive or restriction dictated by radio or telephone, it must be verified with the I-ETMS display.

When the I-ETMS display does not conform with a wayside or cab signal indication, maximum authorized speed, mandatory directive, timetable, or special instruction, be governed by the most restrictive.

Any discrepancies must be reported to the dispatcher.

9. I-ETMS System Software Downloads and Installs

During initialization, if the I-ETMS ONBOARD DISPLAY prompts "Please Wait for Software Download" or "New Software Available" the locomotive engineer must not cancel the software download or install. Unless otherwise restricted, if a software download or install exceeds 10 minutes, the locomotive engineer must not cancel the download. If the software download exceeds 10 minutes, notify the Train Dispatcher, and contact Tenant railroad I-ETMS support personnel for instructions.

10. Troubleshooting

Foreign railroads operating on Amtrak territory will contact the appropriate host railroad PTC help desk.

Marc trains experiencing issues or anomalies prior to entering I-ETMS territory will contact the Marc Support Desk and Commuter Control Center.

11. Issues and Anomaly Reporting

When any of the following issues or anomalies occur, they must be reported to the dispatcher. The report must include time, date and location, Train ID, Locomotive number and count, engineer name, car count, any a description of any unusual events.

- The I-ETMS system does not transition to a I-ETMS enforceable state after entering I-ETMS track (i.e. I-ETMS Active state)
- I-ETMS is suspected of not providing a warning for a target or restriction when it should have.
- A mandatory directive is received in writing which is not enforced by the I-ETMS system.
- I-ETMS enforcement for a mandatory directive which has not been received in writing.
- I-ETMS system prompt or enforcement due to Non-Synchronized territory.
- I-ETMS display information is incorrect or intelligible
- Switch or wayside signal discrepancies (i.e. Permissive wayside signal enforced as Stop by I-ETMS, wayside signal does not match the PTC display).
- PTC troubleshooting guidance does not correct the I-ETMS system and permit system usage.
- I-ETMS system failures as defined in the operating rules.

F. 595-S1. I-ETMS Enforcement of Interlocking and Control Point Signals

A. Stop Signal Enforcement

I-ETMS will enforce a positive stop at interlocking and CP signals displaying Stop Signal.

B. Approaching Interlocking & CP Signals

I-ETMS will cause a penalty application of the brakes to occur on trains that are approaching interlocking and CP signals, if the train is approaching the signal at a speed above the predicted stopping distance for the signal, as shown on the I-ETMS CDU.

C. “Pass Signal at Stop” – Prompt

Trains must be stopped within 1500 feet of a signal enforcing a positive stop for 300 seconds before the “Pass Signal at Stop” prompt will be displayed on the onboard display.

Unauthorized acknowledgment of this prompt may interfere with the safe passage of trains and is therefore prohibited. Unless otherwise specified, acknowledgment of the prompt is authorized only as prescribed below:

(1) Train at Stop Signal - Rule 241 Permission:

After a train has received Rule 241 permission from the dispatcher to pass a fixed signal displaying Stop Signal, and the dispatcher or operator has confirmed the repetition of that permission, the prompt may be acknowledged to allow the train to proceed.

(2) Train at Signal Other Than Stop Signal:

The “Pass Signal at Stop” Prompt should not display to pass any fixed signal other than a Stop Signal at any interlocking or Controlled Point. If this anomaly occurs the prompt must not be acknowledged until the crew has received the dispatcher’s permission as prescribed below:

- (a) The crew must advise the dispatcher of the train’s location, track, direction, and the name of the next governing signal.
- (b) Before granting permission to acknowledge the prompt to pass a fixed signal other than Stop Signal, the dispatcher must verify the train’s location, track, direction and route status, and ensure that no opposing or conflicting movements have been authorized.
- (c) Once it has been determined that it is safe to do so, permission to acknowledge the prompt to pass a fixed signal other than Stop Signal must be given in the following manner:

“No. 5314 engine 4129 may acknowledge the “Pass Signal at Stop” Prompt on No. 2 track at Rare.”

The receiving employee must repeat this permission to the dispatcher or operator and must not acknowledge the prompt until the dispatcher or operator has confirmed the repetition.

- (d) The dispatcher or operator must record and report all information pertaining to the I-ETMS anomaly.

D. 550-S1. Automatic Train Control System

The following note is added to SI 550-S1 item 1 as indicated below.

1. Trains that experience a cab signal, ATC, Speed Control or LSL failure en route while operating in CSS territory. (Trains operating in non-CSS territory cannot claim an en route cab signal, ATC, Speed Control or LSL failure, unless they have experienced a catastrophic failure of their on-board apparatus, such as a major debris strike that damages their cab signal pickup bar.)

NOTE: Trains operating with I-ETMS that experience a cab signal, ATC, Speed Control or LSL failure enroute must consider I-ETMS to be inoperative and proceed in accordance with SI 592-S2.



Shawn K. Gordon, AVP Transportation- Southeast Division
Steven J. Young, AVP Transportation- Northeast Division