

PANAMA
CANAL
RAILWAY
COMPANY

SYSTEM
TIMETABLE

AND
SPECIAL INSTRUCTIONS

No. 2

In Effect: 0001 hrs. Sept 29, 2008

T. H. Kenna
President and CEO

J. D. Wallace
Chief Transportation Officer

Job Briefing

Before commencing any task that requires the participation of two or more employees, the personnel must hold a job briefing to ensure that all involved will have a clear understanding of the moves to make and the individual responsibilities. Must also discuss the following:

1. The work or switching to be done.
2. Everyone's responsibility.
3. Any additional instructions due to unusual circumstances.
4. Any specific reminders in relation to hazardous conditions or unusual scenarios.
5. When working on or near the tracks, discuss the form of protection, which are your limits of authority and your method of protecting.

Job briefings may be held as many times as necessary as conditions change.



Safety Statement

It is the policy of Panama Canal Railway Company (PCRC) that its operations be conducted in a safe manner.

As an integral part of this policy, the management of PCRC believes that all accidents and injuries can be prevented. We are committed to providing a safe working environment for all our employees.

ALL Employees are accountable for ensuring their own safety and the safety of their co-workers, preventing accidents and injuries, and having a positive Safety Attitude.

No job is so important and no service is so urgent that we can not take the time to perform it safely.





**SAFETY
IS
PRIORITY
ONE!**

**WORKING
SAFELY
IS OUR
RESPONSIBILITY**



PANAMA CANAL RAILWAY COMPANY

Telephone Numbers

DISPATCHER (24 hr. #)	317-6341
DISPATCHER CELL	6450-4455
GENERAL OFFICE	317-6070
PACIFIC INTERMODAL TERMINAL	232-7366
COROZAL MAINTENANCE SHOP	317-6070
COROZAL PASSENGER STATION	317-6056
ATLANTIC INTERMODAL TERMINAL	430-2171
AIT MECHANICAL / MAINTENANCE SHOP	430-2165
RULES, TRAINING & SAFETY	6616-7149

PCRC SPECIAL INSTRUCTIONS

MP 0.0 thru MP 45.5

INFORMATION CHART

SOUTHWARD	SIDING LENGTH IN FEET	MP LOCATION	N SWITCH LIMIT	STATION NAME	S SWITCH LIMIT	Meth of Oper	DIST FROM PIT	MAX GRADE WRC
0.52 - 0.90 + 0.90 - 0.66 + 1.24 - 1.12 - 0.46 0.23 NORTHWARD		0.5	0.0	A I T 4.3	2.3		44.5	+ 0.52
		2.8	2.9	COLON 11.3			42.3	
	DO AIT	3.8		MT. HOPE SWITCH	3.8			
		4.5		MT. HOPE YARD LIMIT	4.5			
		14.0	13.7	MONTE LIRIO 13.7			31.0	- 0.90
		24.00						+ 0.66
		27.7	27.4	GAMBOA 12.5			17.3	- 1.24
		31.42						+ 1.12
		40.2		PEDRO MIGUEL 4.3			4.8	+ 0.48
		1572					40.3	
		43.5		COROZAL YARD LIMIT	43.5			
		43.9		COROZAL 1-3 SWITCH	43.9			
		44.0		COROZAL PASS TO SWITCH	44.0			
	44.5		COROZAL 0.3			0.5		+ 0.23
	45.0		P I T					

Main Track extends from MP 2.3 to MP 44.0. Movements on all other tracks must be made as per PCRC Rule 6.17. Mt. Lirio, Gamboa and Pedro Miguel are "Controlled Tracks" and Operating Crews must be in possession of a Track Warrant to occupy these tracks.

1. MAXIMUM AUTHORIZED SPEEDS

A. MAXIMUM AUTHORIZED TRACK SPEED

Passenger	60 MPH
Intermodal	50 MPH
Freight (Non - Intermodal)	50 MPH
Mixed Trains (Passenger/Freight)	50 MPH

B. PERMANENT TRACK SPEED RESTRICTIONS:

BETWEEN:

DO NOT EXCEED:

MP 00.00 & MP 01.35	Restricted Speed - 10 MPH
MP 01.35 & MP 04.50	Restricted Speed - 20 MPH
MP 04.50 & MP 06.13	45 MPH
MP 06.13 & MP 11.00	55 MPH
MP 16.15 & MP 17.24	55 MPH
MP 23.88 & MP 24.88	50 MPH
MP 24.88 & MP 25.25	35 MPH
MP 25.25 & MP 30.00	55 MPH
MP 30.00 & MP 30.30	20 MPH
MP 30.30 & MP 31.00	40 MPH
MP 31.00 & MP 34.15	50 MPH
MP 36.90 & MP 37.40	30 MPH
MP 37.40 & MP 38.13	40 MPH
MP 38.13 & MP 41.27	50 MPH
MP 41.27 & MP 41.40	35 MPH
MP 41.40 & MP 43.50	50 MPH
MP 43.50 & MP 44.69	Restricted Speed - 20 MPH
MP 44.69 & MP 45.50	Restricted Speed - 10 MPH

C. MAX. AUTHORIZED SPEED OF TURNOUTS:

Mount Hope Switch	20 MPH
Gamboa NSS Inbound	20 MPH
Gamboa NSS Outbound	35 MPH
Gamboa SSS Inbound	20 MPH
Gamboa SSS Outbound	35 MPH
Corozal 1-2 Switch	20 MPH
All Other Turnouts	10 MPH

D. OTHER TRACK SPEED RESTRICTIONS:

AIT Terminal Tracks between MP 0 and MP 1.35	10 MPH
PIT Terminal Tracks between MP 44.69 and MP 45.5	10 MPH
Gamboa Siding	35 MPH
Along Passenger Station Platforms	10 MPH
Within Mechanical Limits	8 MPH
North Leg Of Wye	5 MPH
South Leg Of Wye and Cristobal Terminal Tracks	10 MPH

E. MAX. AUTHORIZED SPEED OF EQUIPMENT:

Lite Locomotive(s)	
With Effective Dynamic Brakes	50 MPH
Without Dynamic Brakes	40 MPH

F. RAILROAD CARS AND COACHES:

Passenger Coaches	60 MPH
Articulated Intermodal Flats (DS Cars)	50 MPH
Flat Cars	25 MPH
Open Top Hoppers	25 MPH

G. ON-TRACK EQUIPMENT / HI-RAILS:

UNIT No.	UNIT TYPE	MAX SPEED
101	Suburban	50 MPH
102	Suburban	50 MPH
201	Durango	50 MPH
202	¾ Ton GMC P/U	50 MPH
204	Chevrolet 2500 P/U	50 MPH
210	Tie Tamper	25 MPH
230	Ballast Regulator	25 MPH
240	TrackMobile	25 MPH
250	Wheel Truck	25 MPH
260	Welding Truck	25 MPH
280	Speed Swing	25 MPH

HI-RAIL VEHICLES ARE NOT TO EXCEED 20 MPH WHEN PASSING OVER SWITCHES OR FROGS

2. RADIO COMMUNICATIONS

Dispatcher Road Channel	CHANNEL 1
PIT And AIT Terminal Ops	CHANNEL 2
Train Switching Channel	CHANNEL 3

3. METHOD OF TRAIN OPERATION

- **Track Warrant Control Territory** In Effect Between: MP 4.5 & MP 43.5
- **Controlled Tracks (TWC):** Monte Lirio Spur, Gamboa Siding, and Pedro Miguel Spur.
- Main Tracks and Other Than Main Tracks may be occupied within Yard Limits as prescribed by PCRC Operating Rules 6.2, 6.11 & 6.18.

4. OPERATING RULES IN EFFECT

PCRC OPERATING RULES, FIRST EDITION, IN EFFECT 0001 HOURS MARCH 21ST, 2005

5. MECHANICAL LIMITS IN EFFECT

AIT MECHANICAL LIMITS

South Limit: MP 0.99 (AIT Shop Lead Switch)
Tracks : Shop Lead, Inside Rip, Pit Track and Outside Rip
North Limit: North End Of Each Track

6. YARD LIMITS IN EFFECT

Mount Hope	MP 0.0 & MP 4.5
Corozal	MP43.5 & MP 45.5

7. SWITCHING LIMITS IN EFFECT

ATLANTIC INTERMODAL TERMINAL (AIT) :

North Limit: MP 0.00
South Limit: MP 2.25

PACIFIC INTERMODAL TERMINAL (PIT) :

North Limits:
Track 1 MP 44.04 (Pass Lead Switch)
Track 2 MP 44.00 (Corozal 1-2 Switch)
South Limit: MP 45.54

8. DISPATCHER-CONTROLLED YARD LIMITS

MOUNT HOPE	
North Limit:	MP 2.25, includes Colon Station, Cristobal, and Wye Tracks
South Limit:	MP 4.5

COROZAL	
South Limits:	Track 1 MP 44.04 (Pass Lead Switch) Track 2 MP 44.00 (Corozal 1-2 Switch)
North Limit:	MP 43.5

9. NAME, LOCATION AND NORMAL POSITION OF SWITCHES

NAME:	LOCATION:	LINED FOR:
AIT NORTH 1-3	MP 00.05	EITHER
AIT NORTH 1-2	MP 00.08	EITHER
AIT NORTH 1E-1W	MP 00.13	EITHER
AIT SOUTH 1E-1W	MP 00.80	EITHER
AIT SOUTH 1-2	MP 00.86	EITHER
AIT SOUTH 1-3	MP 00.92	EITHER
SHOP LEAD	MP 00.99	AIT LEAD
INSIDE RIP		EITHER
PIT/OUTSIDE RIP TRK	ES 654+85	EITHER
NORTH LEG OF WYE	ES 72+47	PASS LEAD
SOUTH LEG OF WYE	ES 95+67	PASS LEAD
MOUNT HOPE	MP 03.76	EITHER
MONTE LIRIO	MP 13.75	MAIN TRK
GAMBOA NSS	MP 27.40	MAIN TRK
GAMBOA SPUR	MP 27.89	SIDING
GAMBOA SSS	MP 28.10	MAIN TRK
PEDRO MIGUEL	MP 40.32	MAIN TRK
CZ 1-2 LEAD	MP 43.89	EITHER
CZ PASS LEAD	MP 44.02	EITHER
N SW OF N X-OVER	MP 44.56	#1 LEAD
S SW OF N X-OVER	MP 44.59	#2 LEAD
N SW OF S X-OVER	MP 44.59	#2 LEAD
S SW OF S X-OVER	MP 44.63	#1 LEAD
PIT NORTH 2-3	MP 44.66	#2 TRK
PIT N 2E/2W SW	MP 44.78	EITHER
PIT 3-4 SW	MP 44.49	#3 TRK
PIT S 2W/3 SW	MP 45.43	EITHER
PIT S 2E/3 SW	MP 45.48	EITHER
PIT SOUTH 1-3	MP 45.51	EITHER

Crews may be relieved of the requirement to restore these switches to the Normal Position by the Terminal Supervisor or the Dispatcher.

10. LOCATION OF GRADE CROSSINGS

AIT NORTH RAMP (TRK 1)	MP 0.35
AIT SOUTH RAMP (TRK 1,2,3)	MP 0.74
AIT SOUTH GATE	MP 1.01
TAXIWAY	MP 1.09
GOLD HILL	MP 1.35 *
FREE ZONE CROSSING	MP 1.88 *
4-ALTOS (prepared to stop and flag)	MP 2.38 *
COLON PLAZA	MP 2.90 *
TRINIDAD	MP 3.03 *
NIGRIL	MP 3.13 *
FALMOUTH	MP 3.22 *
RANDOLPH	MP 3.35 *
WILSON	MP 3.46 *
WHITLOCK	MP 3.58 *
BOLIVAR	MP 3.69 *
MT. HOPE	MP 3.80 *
MINDI	MP 6.27
GATUN	MP 7.40 *
NAVIGATIONAL AID	MP 25.79
AIRPORT	MP 28.37
SMITHSONIAN	MP 28.77 *
NORTH GATE DREDGING DIVISION	MP 29.12
MAIN GATE DREDGING DIVISION	MP 29.59 *
PENITENTIARY	MP 30.83
SLIDE	MP 33.9
ARMY	MP 32.55
SUMMIT	MP 34.77 *
CERRO LUISA	MP 38.89
PEDRO MIGUEL	MP 39.83 *
PM NORTH PEDESTRIAN	MP 40.01
PM SOUTH PEDESTRIAN	MP 40.20
NORTH TUNNEL	MP 41.34
MIRAFLORES	MP 41.88 *
SWING BRIDGE	MP 42.50
MORGAN'S GARDEN	MP 43.11
LEISERING	MP 43.60 *
COROZAL	MP 43.73 *
DIABLO	MP 44.69 *
PIT NORTH RAMP (TRK 2W & 2E)	MP 44.85
PIT NORTH RAMP (TRK 2W, 2E, 3)	MP 44.88
PIT SOUTH RAMP (TRK 2E & 2W)	MP 45.26

Crossings indicated by * are designated Public Crossings and PCRC Rule 6.22.5 applies.

11. DIABLO CROSSING, MP 44.69

The crossing protection gates at Diablo Crossing may be operated manually from the signal cabinet or remotely using the radio microphone keypad on Channel 3.

To activate the gates remotely, input 10#1011. To restore to normal, input 10#1010.

Between the hours of 0600 and 1800, with clear visibility, the gates may be restored to normal once the crossing is completely occupied.

During times of poor visibility and between the hours of 1800 and 0600, the crossing gates are to be left down protecting the crossing until the entire train has cleared the crossing.

12. CROSSING RESTRICTIONS

SPEED NOT TO BE EXCEEDED WHEN APPROACHING SPECIFIED CROSSINGS:

4 - Altos	MP 2.38	SBD 10 MPH	NBD 10 MPH
Colon Plaza	MP 2.90	SBD 15 MPH	NBD 15 MPH
Trinidad	MP 3.03	SBD 15 MPH	NBD 15 MPH
Falmouth	MP 3.22	SBD 15 MPH	NBD 15 MPH
Randolph	MP 3.35	SBD 15 MPH	NBD 15 MPH
Wilson	MP 3.46	SBD 15 MPH	NBD 15 MPH
Bolivar	MP 3.69	SBD 15 MPH	NBD 8 MPH
Corozal	MP 43.73	SBD 15 MPH	NBD 20 MPH
Diablo	MP 44.69	SBD 10 MPH	NBD 10 MPH

13. PERMANENT HIGH-WIDE LIMITATIONS

MONTE LIRIO BRIDGE	MP 13.54 - MP 13.59
VERTICAL	Open
HORIZONTAL	15 ft. 9 in.
TRACK	Tangent
GAMBOA BRIDGE	MP 30.04 - MP 30.28
VERTICAL	22 ft. 6 in.
HORIZONTAL	13 ft. 7 in.
TRACK	6 deg 1/2 mi.
MIRAFLORES TUNNEL	MP 41.43 - MP 41.57
VERTICAL	22 ft. 2 in.
HORIZONTAL	15 ft. up to 16 ft. vert.
TRACK	Tangent

14. HANDBRAKES

(See PCRC Rule 7.6 for full instructions)

PIT: One handbrake on the lead locomotive of a train positioned with the power on the North End. If no locomotives are on the train, one handbrake on the North car.

AIT: One handbrake on the North car.

In all other circumstances, cars and equipment must be secured with a handbrake.

15. PCRC RULE 9.13 - ELECTRONIC TRACK WARRANT CONTROL RULES

- 9.13.1 The issuance and receipt of Electronic Track Warrant Authority is authorized for use between MP 4.5 and MP 43.5.
- 9.13.2 Monte Lirio Spur, Gamboa Siding, and Pedro Miguel Spur are controlled tracks. Track Warrant Authority must be obtained before occupying these tracks.
- 9.13.3 All trains, whether equipped with ETW hardware or not, must Partial Clear (OS) their Warrants at MP 11 when proceeding Northbound and at MP 39 when proceeding Southbound.
- 9.13.4 When equipped with Electronic Track Warrant (ETW) control hardware and operating outside of Yard Limits, the controlling unit of a locomotive consist must have the ETW hardware powered up, cut-in and operating. The P2A feature must be tested prior to movement. When equipped, EOTs must always be Armed and a test of the Emergency Air Brake feature must be done to ensure feature is working as intended. All trailing locomotives of a consist must have ETW hardware cut-out. P2A And EOT failures must be reported to the Dispatcher.
- 9.13.5 Once cut-in, the ETW hardware must not be cut-out on a controlling unit without the authorization of the Dispatcher.
- 9.13.6 In the event of an inadvertent cut-out or failure of the ETW hardware on a moving train, the train crew must STOP the train. Once stopped, the crew must inform the Dispatcher that the system has failed. The train crew may only proceed under direction of the Dispatcher, who will issue a Manual Track Warrant when necessary.
- 9.13.7 Dispatchers are instructed to dispatch Track Warrant Authority using Electronic Track Warrants for all trains equipped with ETW hardware. When a Warrant is issued, it automatically voids a previous Warrant. Train crews must NOT act upon a Warrant until verbal OK time has been received from the Dispatcher.
- 9.13.8 Trains that do not have a functioning Electronic Track Warrant hardware system must be dispatched with the use of the computerized Track Warrant Control System.
- 9.13.9 When necessary to dispatch trains without the computerized Track Warrant Control System, the Dispatcher must receive authorization from the on-duty Operations Supervisor.
- 9.13.10 All Safety Control devices associated with the Sentinel system, including P2A and Overspeed valves, must be cut in at all times and may only be cut out after receiving permission from the Dispatcher. Tampering with these devices is not permitted. Before giving this permission, the Dispatcher must receive permission from the on-duty Operations Supervisor and must document the reason/situation on the Train Sheet.

16. SWITCH POINT INDICATORS

Switch Point Indicator lights are in service at the following locations:

A) MOUNT HOPE SWITCH

MP 3.76

- Green Aspect: Switch is lined and locked for movement from Main Track to Passenger Lead.
- Yellow Aspect: Switch is lined and locked for movement on AIT Lead.
- Red Aspect: Switch is Out Of Correspondence; it is not lined or locked in either direction. Movement must STOP and contact the Dispatcher.

B) COROZAL TRACK 1 -2 SWITCH

MP 43.89

- Green Aspect: Switch is lined and locked for movement from Main Track to Outside Track #1.
- Yellow Aspect: Switch is lined and locked for movement from Main Track to Outside Track #2.
- Red Aspect: Switch is Out Of Correspondence; it is not lined or locked in either direction. Movement must STOP and contact the Dispatcher.

C) NORTH SIDING SWITCH GAMBOA

MP 27.4

D) SOUTH SIDING SWITCH GAMBOA

MP 28.1

- Aspect:** Green
- Indication:** Switch is lined and locked in the normal position, Main Track to Main Track.
- Instruction:** Proceed as authorized, governed by Track Warrant Control rules.

- Aspect:** Yellow
- Indication:** Switch is lined and locked in the Reverse position, Main Track to Siding.
- Instruction:** Proceed as authorized, governed by Track Warrant Control rules.

- Aspect:** Red
- Indication:** Switch is Out Of Correspondence; it is not lined or locked in either direction. Movement must STOP and contact the Dispatcher.
- Instruction:** STOP. Proceed only under direction of the Dispatcher.

17. DUAL CONTROL SWITCHES OUTSIDE YARD LIMITS

(Refer to PCRC Operating Rule 8.15 for specific instructions on when and how to handle these switches in Manual mode)

1. Obtain permission from the Dispatcher.
2. Ensure foot pedal is locked in the Down position.
3. Unlock and open yellow access cover and place switch in Manual position by aligning the ring-switch with the round hand crank hole.
4. Remove handle and place in the hand crank hole. Rotate handle until it stops.
5. Advance the train until the leading wheels occupy the switch.
6. Restore to Automatic position by removing the hand crank and sliding the ring-switch to an off-set position in the hand crank hole (in this position the hand crank cannot be inserted).
7. Close and lock the yellow access cover. Secure hand crank in it's position and lock.

When the alignment of the these switches are indicated in text form on the on-board Sentinel equipment, the instructions displayed are to be adhered to. If an unfavorable indication is received, the Dispatcher is to be notified at once.

18. DUAL CONTROL SWITCHES INSIDE YARD LIMITS

(Refer to PCRC Operating Rule 8.15 for specific instructions on when and how to handle these switches in manual mode)

1. Obtain permission from the Dispatcher.
2. Open the push-button box on the side of the signal mast. Press and hold the button until the switch begins to move. Once the switch begins to move, remove finger from button. Once the switch has lined up, check the switch indicator to ensure you have the required color aspect on the indicator. Also inspect the switch to ensure it is lined correctly and has no defects. If the switch is lined correctly, lock the push-button cabinet and proceed.
3. If unable to operate the switch with the push-button due to failure (dead batteries, lack of power etc), unlock the pump handle from the side of the switch machine cabinet and remove.
4. Open square box and insert pump handle into pump. Select the direction that you wish the points to move with the large black knob.
5. Start pumping the handle. The points will start to move, and the spring action will then move the points over quickly. Once the points are over, continue pumping until pressure is felt on the handle. Do not over-pump as damage may occur.
6. Check the switch indicator to ensure correct color aspect is shown on the indicator. If correct, store the handle back in it's storage spot and lock the square box.
7. Ensure push-button box is locked. Movement may proceed

19. WAYSIDE DETECTORS MP 25.8 AND MP 32.5

The following instructions will apply when trains receive an alarm at the Wayside Detectors:

Hot Bearing

Train must stop immediately consistent with good train handling procedures and inspect the affected axle(s).

Dragging Equipment

Train must stop immediately consistent with good train handling procedures and inspect the affected axle(s).

Hot Wheel

Northbound trains at detector MP 32.5 - Proceed down the hill, stop train between switches at Gamboa, either on the Mainline or the Siding, and perform inspection.

Southbound trains at detector MP 32.5 - Proceed up the hill, stop train on level grade between MP 33.6 and MP 34.8, and perform inspection.

Northbound trains at detector MP 25.8 - Stop and inspect at that location.

Southbound trains at detector MP 25.8 - Stop train between switches at Gamboa, either on the Mainline or the Siding, and perform inspection.

Other

"System Failure"
"Slow Train, Ground Inspection Required"

or if no message is transmitted by the detector, the following instructions will apply:

Southbound trains at 25.8 and Northbound trains at 32.5:

Train may proceed to the subsequent detector and be inspected by that detector. Should the subsequent detector transmit any of the same alarms or not transmit a message, a roll-by inspection must be completed by the train crew at that location.

Southbound trains at 32.5 and Northbound trains at 25.8:

The train is authorized to continue to destination, however an **inbound** roll-by inspection must be done by the Terminal Supervisor or other qualified employee at destination on the way **into** the yard. This inspection is to be arranged by the train crew before arrival.

In all cases, the Dispatcher must be notified.

20. FUEL CONSERVATION INSTRUCTIONS

Fuel conservation techniques are developed from studies concerning Track Train Dynamics. These studies involve train makeup, horsepower ratios, train handling techniques and train performance. Studies have proven that Dynamic Brake should be considered the primary choice of retardation.

The optimal consist on the PCRC will be to have an SD60 on the North end and an F40 on the South end. This will permit the use of the HEP (480-volt) for reefers, which primarily flow Northward. The passenger train will continue to use an F40 on each end.

The SD60 locomotives burn 22% less fuel than an F40, and yet generate 800 more horsepower. They also provide significantly more Dynamic Braking. Therefore, the following instruction is in effect.

When operating an intermodal train with an SD60 and an F40 coupled together:

Trains 1500 tons or less: The F40 must be isolated and placed in Low Idle between MP 0 and MP 45.5.

Trains greater than 1500 tons: The F40 must be isolated and placed in Low Idle between MP 0 and MP 30.

Exceptions to this instruction will be if the F40 is required for HEP (480-volt) service or when authorized by the On-Duty Operations Supervisor.

In addition, all locomotives must be *shut down* when it is known that they will be stopped for more than 45 minutes. When stopped for less than 45 minutes, locomotives must be left isolated and on Low Idle.

Operating employees are reminded of the requirement to secure equipment with a handbrake when the equipment is shut down and not generating air pressure.

In the spirit of operating the passenger train on-time, it will be permissible to have both F40's operating. Use of Throttle Modulation and Dynamic Brake will be the preferred method of train handling.

21. TRAIN ROLL-BY INSPECTIONS

When meeting or passing trains, a train roll-by inspection must be performed by a Crew Member from the ground. The results of the train inspection will be communicated to the passing Train Crew on Channel 3. If either crew is unable to communicate with the other train on Channel 3, the results will be communicated on Channel 1.

22. END OF TRAIN DEVICES

When available, the use of an Armed End Of Train device (EOT) is required. EOTs must always be Armed and a test of the Emergency Air Brake feature must be done from the lead locomotive to ensure feature is working as intended. When an EOT is removed from the rear of a train it should be laid on it's side to allow it to shut down. The EOT must be re-installed on the rear of another train in a timely manner. EOTs are to remain mounted on trains at all times to avoid misplacing them. EOTs that are bad order must be tagged with the defect indicated and left at the PIT office. The Dispatcher must be advised of the EOT number and defect.

23. LOCOMOTIVE INSPECTIONS

An initial terminal Locomotive Inspection must be performed on every locomotive consist once every 24 hours.

A Locomotive Engineer or other qualified employee will make the inspection and fill out the Daily Inspection Form.

To clarify, the Inspection will be performed on each train after 0700 each day. Crews called for 0700 or later must perform the inspection on their consist and any other locomotive consist as instructed by the Terminal Supervisor.

A Locomotive Inspection Form shall be kept on each locomotive.

Any Mechanical or Safety exceptions found that need immediate attention must be reported to the appropriate Terminal Supervisor. All exceptions must be reported to the Dispatcher.

24. INITIAL TERMINAL TRAIN AND AIR BRAKE INSPECTION

An initial terminal Train And Air Brake Inspection must be performed on all trainsets once every 24 hours.

A crew member or other qualified employee will make the inspection, fill out the Inspection Form, and leave this form with the PIT Terminal Supervisor or with the appropriate Supervisor.

To clarify, the Inspection will be performed on each train after 0700 each day. Crews called for 0700 or later must perform the inspection on their train and any other trains as instructed by the Terminal Supervisor.

Any Mechanical or Safety exceptions found that need immediate attention must be reported to the appropriate Terminal Supervisor and the Dispatcher. All exceptions should be reported on the Inspection Form, and the Form must be delivered to the Terminal Supervisor.

25. LOCOMOTIVE AIR BRAKE TEST

Operating Crews must conduct a Standing Locomotive Air Brake Sequence Test when:

- A locomotive engineer takes charge of a locomotive consist, except when changing off with another locomotive engineer
- Making up a locomotive consist
- Taking a new consist from a Shop Track
- Adding or removing locomotives, except when cutting off the rear locomotive(s) of the consist

Operating crews must conduct a Running Locomotive Air Brake Sequence Test when:

- Changing operating ends

PROCEDURE FOR STANDING LOCOMOTIVE AIR BRAKE SEQUENCE TEST:

Protect the consist and/or train from movement by applying the appropriate handbrakes as required. Position a qualified employee on the ground to observe the brake pistons on all locomotives in the consist. This employee will ensure the pistons are operating as intended after each step of this test.

1. Release the Independent brake.
2. Apply the Automatic brake by making a 10-psi brake pipe reduction.
3. Actuate (Bail) the Independent.
4. Reduce brake pipe an additional 10 psi.
5. Release the Automatic brake.
6. Apply the Independent brake.

PROCEDURE FOR RUNNING LOCOMOTIVE AIR BRAKE SEQUENCE TEST:

Locomotive air gauges are to be used to confirm brakes set up and release as required.

1. Ensure Independent brake is applied with gauges.
2. Release all hand brakes.
3. Release the Independent and commence movement with the consist.
4. As soon as locomotives begins to move and speed is slow, apply Independent brake and confirm application.
5. Release Independent brake, confirm release.
6. Make a 10 psi brake pipe reduction and confirm engine brakes apply.
7. Actuate (Bail) the Independent and confirm engine brakes release.
8. Reduce Brake Pipe an additional 10 psi and confirm engine brakes apply.
9. Release the Automatic and confirm the engine brakes release.

26. PROCEDURE FOR CHANGING ENDS ON A LOCOMOTIVE CONSIST

Prior to cutting out air brakes, the consist must be secured. This may be accomplished by being tied on to cars that are secured, applying a hand brake, or by leaving the Independent cut in and applied on the locomotive being made to Trail.

Once the new Lead locomotive has been cut in and the Independent is verified applied, the handbrake may be released or the Independent on the Trailing locomotive may be cut out.

27. TERMINAL OPERATING RULES

1.0 TRAIN & EQUIPMENT MOVEMENT

1.1 All train movements within Switching Limits of the Intermodal Terminals are to be made under the authority of the respective On-Duty Terminal Manager or Supervisor. Engines, trains, or cars are not to be moved or coupled to without the authorization of the On-Duty Terminal Manager or Supervisor, as per PCRC Operating Rule 6.2.

1.2 All vehicular and equipment movement within an active terminal loading area (The Ramp) are under the direction of the on-duty Terminal Manager or Supervisor.

2.0 PROTECTION OF MEN AND EQUIPMENT

2.1 All persons within an active Loading Ramp of a terminal are to work under the authority of the On-Duty Terminal Supervisor.

2.2 When entering an active Intermodal Terminal loading area, all employees are required to report in with the On-Duty Terminal Supervisor.

2.3 Guests visiting the Terminals are to be accompanied by an employee.

2.4 During terminal operations, all persons on the ground are required to wear Highly-Visible Clothing or a reflective vest and should have a functioning radio.

2.5 When access to a train or equipment inside switching limits is required, employees must request and receive Red Zone Protection from the On-Duty Terminal Supervisor before entering the area. When Red Zone Protection is no longer needed, the employee protected must declare himself clear of the Red Zone and not re-enter the Red Zone without additional authorization.

3.0 ACTIVATING HEAD END POWER (HEP)

3.1 When the use of Head-End Power (480-volt) is required, the HEP is not to be activated under any circumstances until authorized by the On-Duty Terminal Supervisor.

3.2 Before authorizing the activation of Head-End Power, the Terminal Supervisor must be certain that all persons are clear of the Red Zone of the train affected.

3.3 Before authorizing any persons to enter a Red Zone of a train which has the Head-End Power active, the Terminal Supervisor must inform and confirm that the person understands that the HEP system is live.

4.0 SEQUENCE PROCEDURE FOR REEFER CONNECTIONS AND ACTIVATING A HEAD END POWER SYSTEM:

- A. With the HEP shut down, the train must be inspected to ensure the safe operation of the 480-volt system and to ensure that the 480-volt jumper cables are connected between the engine and all cars requiring current. On cars that do not require current, the 480-volt jumper cables are to be disconnected and secured in a safe manner.
- B. Unless authorized, reefer plugs must be plugged into receptacles on the cars with the HEP shut down.
- C. The ON-OFF switch is to be positioned to the ON position.
- D. Once authorized by the On-Duty Terminal Supervisor, the HEP may be activated on the locomotive. Prior to activation, the Locomotive Engineer must sound 1 long and 2 short whistle blasts to alert employees in the area that the 480-volt system is about to be activated.
- E. A second inspection of the train is required to ensure that the system is functioning and that all reefer units are operating properly.
- F. When necessary to unplug the reefer plugs or activate the ON-OFF switch, unless otherwise authorized, the Head-End Power must be shut down.

28. TERMINAL ROLL-BY INSPECTIONS

All trains departing PIT, AIT, and Cristobal must receive a roll-by inspection by a qualified employee in position on the ground outside of their vehicles. The results of the inspection must be communicated to the Train Crew. During a Terminal Roll-By, the maximum speed of 10 MPH is not to be exceeded.

29. DYNAMIC BRAKING

Dynamic Braking will be the preferred braking method on PCRC. Dynamic braking will be used FIRST. Automatic brakes will be used only when Dynamic Brakes are not sufficient to control train speed as required.

When setting up Dynamic Braking, the following must be adhered to:

1. Gradually notch down the throttle handle to Idle.
2. After 10 seconds in Idle, place the Dynamic Brake handle into the Set-Up position.
3. Move the Dynamic Brake handle forward and gradually increase amperage, controlling the train slack with care to avoid an abrupt run-in.
4. Complement the braking procedure with Automatic applications as needed to control the train speed.

To come out of Dynamic Braking, gradually reduce the amperage until Dynamic Brake is in the Set-Up position. Next, place Dynamic Brake handle into the Off position. Finally, place the throttle lever into Notch 1 and gradually start to stretch out the train's slack by advancing the throttle one notch at a time.

30. HELPER OPERATIONS

When necessary to couple a locomotive consist to the rear of a train, the following procedures must be followed:

A. PREPARING HELPER LOCOMOTIVES

1. Prior to coupling to the rear portion of the train, obtain Red Zone protection from the Locomotive Engineer of the train being assisted.
2. After coupling, apply the Independent fully and make a 20-psi brake pipe reduction on the Helper locomotives.
3. Place the Automatic Brake Valve cut-out valve into the "Out" position.
4. Place the Automatic Brake Valve handle into the "Handle-Off" position.
5. After the air hoses are coupled, open the angle cocks.
6. The Engineer on the train being assisted must perform an application and release test.
7. After the test is completed, the train may depart under the direction of the Engineer on the lead end of the train being assisted. The assisting Engineer must keep in close contact with the Engineer on the train being assisted.

B. OPERATING RESPONSIBILITIES

Before making initial movement and after coupling the Helper locomotives to the train, the Engineer on the train being assisted must contact the Helper Engineer and communicate the condition of the train make-up in order to pre-plan train handling requirements.

C. STARTING

The Helper locomotive(s) are the first to use power, followed by the lead locomotive consist.

The Helper Engineer must open the throttle one notch at a time and keep the amperage steady until the train is moving.

Both Engineers must exercise equal care. The Helper Engineer must keep a steady power output as speed increases.

D. SPEED OF TRAIN

Helper Engineer will observe speed indicator while running, and if required will remind the Lead Engineer of speed requirements.

If Helper Engineer is unable to communicate with the Lead Engineer and train continues to operate in excess of the maximum authorized speed, the Helper Engineer must take the necessary action to stop the train.

E. STOPPING

When a stop is being made, the Helper Engineer must continue to work power, easing off slowly until train stalls.

It is important that the Lead Engineer throttles down gradually and in time to let the slack move gently before making a brake application to complete stop.

All stops made with the Helper engine coupled to the train must be made with an Automatic Brake application, and the Helper Engineer must bail off any Automatic application made that sets up the brakes on the Helper consist. Immediately after stopping, the Helper Engineer must fully apply the Independent Brake to prevent the rear of the train from rolling back when the Automatic Brakes are released.

Helper locomotive must not be cut off while the train is moving.

31. PASSENGER SERVICE SCHEDULE

Monday through Friday except Holidays:

Depart Panama City:	07:15 HRS
Arrive Colon:	08:15 HRS
Depart Colon:	17:15 HRS
Arrive Panama City:	18:15 HRS

32. PASSENGER WHISTLE SIGNALS

Crews in Passenger service must be aware of and sound the following whistle signals:

- One long blast 1-Minute prior to departure.
- Two long blasts when starting to move (as per PCRC Rule 5.8.2 [4]).
- One long whistle blast when the train has been spotted at the station and will no longer be moving (Red Zone). This whistle is the signal to on-train staff to allow passengers to detrain.

33. PASSENGER AIR BRAKE INSTRUCTION

Crews operating the passenger train in push-pull configuration are instructed to have the Independent brake valve on the trailing locomotive **cut in and the handle left in the release position**. The Automatic brake valve should be cut out as per normal operation.

34. PASSENGER TRAIN EOT

When available, the passenger train must operate with an EOT on the trailing end. As per freight instructions, this EOT must be Armed and tested, including the Emergency feature, prior to movement.

35. PASSENGER TRAIN 480-VOLT "SHORE POWER" ELECTRICAL SYSTEM

The 480-volt "Shore Power" electrical system at the Colon Passenger Station **shall not** be plugged in or energized when the passenger train arrives and lays over at Colon.

The 480-volt "Shore Power" electrical system **must** be plugged in and energized when the passenger train arrives and lays over at the Corozal Passenger Station.

Exceptions to this policy will be authorized by the On-Duty Operations Supervisor.

36. TRAIN DISPATCHERS

For your reference, the attached employees are qualified Train Dispatchers on the PCRC and will use the following initials when transmitting authorities:

JCC - JC Colteryahn
RWG - RW Gomez
TCG - TC Gonzalez
RJM - RJ Moore
JDW - JD Wallace
SMH - SM Hooper

37. ROLLING STOCK

A. ARTICULATED FLAT CARS (DS cars):

NUMBERED: 200 SERIES

LENGTH:	OVERALL	265 ft 1 1/2 in.
WEIGHT:	LIGHT 185,000 lbs.	84 m tn
CAPACITY:	REGULAR 117,000 lbs.	53 m tn
	MODIFIED 119,250 lbs.	55 m tn
WIDTH:	OVERALL	9 ft 9 3/4 in.
HEIGHT:	BETWEEN CAR AND RAIL (empty)	8 ft 6 in.
HEIGHT:	RAIL TO TOP OF DS HC EMPTY CONTAINERS	19 ft 11 1/2 in.

B. FLAT CARS:

NUMBERED: 300 SERIES

LENGTH:	OVERALL	54 -60 ft.
WEIGHT:	LIGHT 36,000	18 tn.
CAPACITY:	LOAD 60,000 lbs.	30 tn.
WIDTH:	OVERALL	10 ft.
HEIGHT:	TOP OF DECK	44 in.

C. OPEN TOP HOPPERS:

NUMBERED: 11 THRU 20:

LENGTH:	OVERALL	45 ft.
WEIGHT:	LIGHT 47,400	24 tn.
CAPACITY:	LOAD 100,000 lbs.	50 tn.
WIDTH:	OVERALL	10' 4"
HEIGHT:		13' 6"

38. SENTINEL DISPATCH BLOCKS

<u>MILE</u>	<u>NAME</u>
4.5 – 6.0	GAT1
6.0 – 7.0	GAT2
7.0 – 11.0	GAT3
11.0 – 13.7	GATMLI
13.7 – 15.0	MLI1
13.8 – 14.4	MLI2 (Mt. Lirio Spur)
15.0 – 17.0	MLI3
17.0 – 21.0	MLI4
21.0 – 27.4	MLIGBO
27.4 – 28.1	GBO1 (Gamboa Main Trk)
27.4 – 28.1	GBO2 (Gamboa Siding)
27.9 – 30.0	GBO3 (Gamboa Spur)
28.1 – 30.0	GBO4
30.0 – 34.0	GBO5
34.0 – 39.0	GBOPMG
39.0 – 40.3	PMG1
39.9 – 40.2	PMG2 (Pedro Miguel Spur)
40.3 – 42.0	PMG3
42.0 – 43.5	PMG4

39. EOT NUMBERS

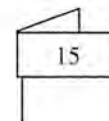
41004	41767
41005	41768
41006	41769
41091	41791
41096	41792
41097	41793
41766	41794

40. ACTIVITIES PROHIBITED

The use of cellular phones or other electronic devices while in motion is prohibited except where the use of it is required for railway purposes such as PCRC Rule 2.5. Playing games, listening to audio devices, or reading printed material not connected with the movement of trains and engines is not permitted while in motion.

41. FIXED SIGNALS: NAME, LOCATION AND INDICATIONS

MILE POST



Posted at each whole mile plus other locations as required. Mileage is measured from beginning of track, MP 0.0, to end of track, MP 45.5.

INDICATES: An identifiable location used for limits of Track Warrants and Track Bulletins.

YARD LIMIT



Located at the limits of a yard.

INDICATES: Limits where train movements are governed by PCRC Operating Rules 611 (Yard Rule) and 617 (Restricted Speed).

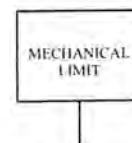
WHISTLE BOARD



Located 1/4 mile in advance of each public crossing at grade.

INDICATES: Locomotive Engineer is to ring bell and sound prescribed whistle sequence from the location of the signal until the locomotive has occupied the crossing.

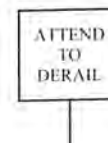
MECHANICAL LIMIT



Posted at limits of designated Mechanical Limits.

INDICATES: Operate under PCRC Rule 5.4.8. Locomotives and equipment must obtain permission from the designated person prior to entering these limits. Locomotives and equipment permitted to enter the limits must operate at Restricted Speed and not exceed 5 mph.

WARNING OF DERAIL



Placed short of derail advising crews of location of derail. Information is indicated on both sides of sign.

INDICATES: Train or equipment must stop short of derail to ensure that the derail is in the proper position for the move to be made. Derail is to be left in the derailing position when not in use.

RESUME SPEED



Placed at the end of each permanent speed restriction.

INDICATES: Engineer may proceed at maximum authorized track speed for type of train or equipment being operated.

ADVANCE PERMANENT RESTRICTION



Placed **1 mile** in advance of a permanent speed restriction.

INDICATES: That a permanent speed restriction exists one mile from the location of this signal.

If reducing speed is necessary in order to comply with the upcoming speed restriction, the Engineer must do so by the time that the restricted area is reached.

PERMANENT RESTRICTION



Placed at a permanent speed restriction.

INDICATES: The limit of a permanent speed restriction. The indicated speed is not to be exceeded within the restricted limits.

ADVANCE YARD LIMIT

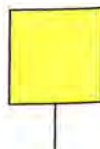


Located **1 mile** in advance of a Yard Limit.

INDICATES: That a Yard Limit exists **1 mile** beyond the location of this signal. Trains must be prepared to proceed at Restricted Speed at the Yard Limit sign.

42. TRACK FLAGS IN USE

YELLOW FLAG



Located **2 miles** in advance of a temporary speed restriction.

INDICATES: That a temporary speed restriction exists **2 miles** from the location of this flag.

If reducing speed is necessary in order to comply with upcoming speed restriction, the Engineer must do so by the time that the restricted area is reached.

YELLOW / RED FLAG



Located **2 miles** in advance of the limits where men or equipment are authorized to work on or near the track under Form B protection.

INDICATES: That men or equipment are working on or near the track under Form B protection.

Train Crews are governed by PCRC Rule 5.4.3 when approaching and proceeding through these limits.

RED FLAG



Located at the location where a train or equipment must not pass.

INDICATES: STOP. Train Crews are governed by PCRC Rule 5.4.5.

GREEN FLAG



Located at the end of a temporary speed restriction.

INDICATES: The end location of a temporary speed restriction.

BLUE FLAG



Located at the limits of an area of track where men are working on, under or between rail cars or equipment.

INDICATES: Limits where men are working on, under or between railcars or equipment. Moving equipment must not pass a blue signal on a track so protected by the signal.

43. INTERNATIONAL PHONETIC ALPHABET

A	ALFA
B	BRAVO
C	CHARLIE
D	DELTA
E	ECHO
F	FOXTROT
G	GOLF
H	HOTEL
I	INDIA
J	JULIET
K	KILO
L	LIMA
M	MIKE
N	NOVEMBER
O	OSCAR
P	PAPA
Q	QUÉBEC
R	ROMEO
S	SIERRA
T	TANGO
U	UNIFORM
V	VÍCTOR
W	WHISKY
X	X-RAY
Y	YANKEE
Z	ZULU

44. RULING GRADE

Northbound	1.22 %
Southbound	1.24 %

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LOCOMOTIVES

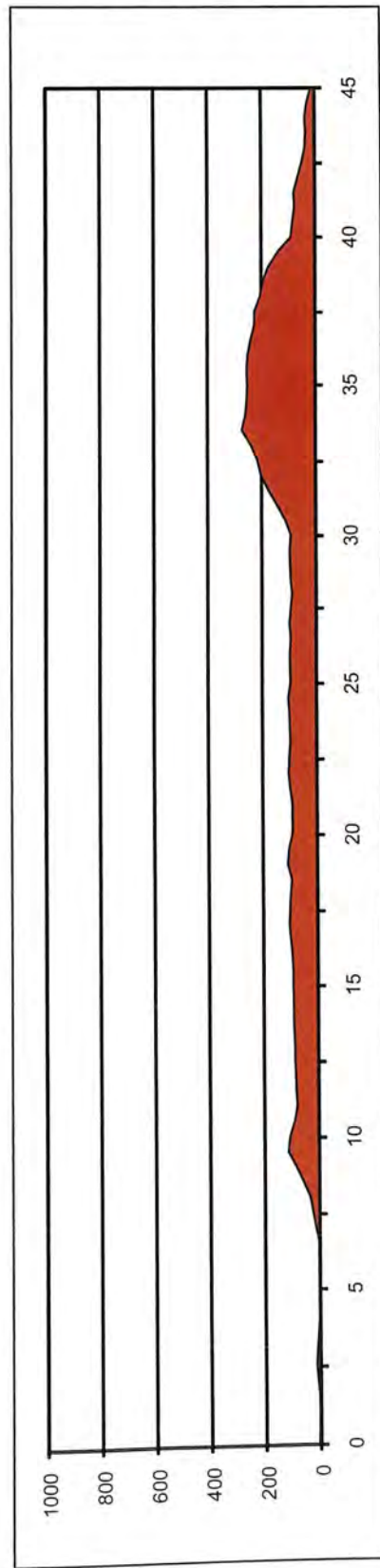
NAME	NUMBER	TYPE	HP	LENGTH	WIDTH	HEIGHT	WEIGHT
COLON	1855	GP-10	1750	56'2"	10' 8 5/8"	15' 5 1/4"	247,000 lbs
PANAMA	1856	F40PH	3000	56'2"	10' 8 5/8"	15' 5 1/4"	260,000 lbs
GAMBOA	1857	F40PH	3000	56'2"	10' 8 5/8"	15' 5 1/4"	260,000 lbs
GATUN	1858	F40PH	3000	56'2"	10' 8 5/8"	15' 5 1/4"	260,000 lbs
PARAISO	1859	F40PH	3000	56'2"	10' 8 5/8"	15' 5 1/4"	260,000 lbs
PEDRO MIGUEL	1860	F40PH	3000	56'2"	10' 8 5/8"	15' 5 1/4"	260,000 lbs
COLOSOLO	1861	F40PH	3000	56'2"	10' 8 5/8"	15' 5 1/4"	260,000 lbs
COROZAL	1862	F40PH	3000	56'2"	10' 8 5/8"	15' 5 1/4"	260,000 lbs
DIABLO	1863	F40PH	3000	56'2"	10' 8 5/8"	15' 5 1/4"	260,000 lbs
BALBOA	1864	F40PH	3000	56'2"	10' 8 5/8"	15' 5 1/4"	260,000 lbs
ANCON	1865	F40PH	3000	56'2"	10' 8 5/8"	15' 5 1/4"	260,000 lbs

RAINBOW CITY	1866	SD40-2	3000	68'	10' 4"	15' 8"	368,000 lbs
SUMMIT	1867	SD40-2	3000	68'	10' 4"	15' 8"	368,000 lbs
M. HAVERTY	1868	SD60	3800	72'	10' 8"	15' 7"	390,000 lbs
LANIGAN	1869	SD60	3800	72'	10' 8"	15' 7"	390,000 lbs
D. STARLING	1870	SD60	3800	72'	10' 8"	15' 7"	390,000 lbs
J. WALLACE	1871	SD60	3800	72'	10' 8"	15' 7"	390,000 lbs
T. KENNA	1872	SD60	3800	72'	10' 8"	15' 7"	390,000 lbs

PASSENGER COACHES

NAME	NUMBER	CAPACITY	LENGTH	WIDTH	HEIGHT	WEIGHT
RIO INDIO	101	50	85 feet	10 feet	13 ft. 6 in.	20 tons
RIO CHAGRES	102	60	85 feet	10 feet	15 ft 2 in.	20 tons
RIO GATUN	103	50	85 feet	10 feet	13 ft. 6 in.	20 tons
RIO PEQUENI	104	50	85 feet	10 feet	13 ft. 6 in.	20 tons
RIO BAYANO	105	50	85 feet	10 feet	13 ft. 6 in.	20 tons
RIO MAMONI	106	50	85 feet	10 feet	13 ft. 6 in.	20 tons

TRACK PROFILE



CHECK LIST PRIOR TO DEPARTURE

1. Job Briefing.
 2. Get Track Bulletins in effect.
 3. Install EOT and get number. Arm EOT and test.
 4. Inspect the train.
 5. Inspect locomotives, sequence and P2A test.
 6. Release hand brakes.
 7. When moving reefers, plug in all units before activating the 480-volt system (HEP).
 8. Supply locomotives with water, ice, paper towels, trash bags and required forms.
 9. Perform air tests as per Special Instructions 24 and 25.
 10. Fill out the Daily Locomotive Inspection card as required.
 11. Fill out the Initial Terminal Train and Air Brake Inspection card and deliver to the Terminal Supervisor.
 12. Request permission from the Terminal Supervisor to remove Red Zone protection and initiate movement. Obtain train consist information (# of cars, tonnage, length).
 13. Request authority from the Dispatcher prior to entering Dispatcher-Controlled Yard Limits.
 14. Provide the Dispatcher with the following train information:
 - ⇒ Locomotive numbers
 - ⇒ Crew members
 - ⇒ Departure track ex PIT
 15. Compare train consist in Sentinel with the consist provided by the Terminal Supervisor to ensure they match.
 16. Review Track Bulletins and Track Warrants before and during the trip.
 17. Call out all signals during the trip such as:
 - ⇒ Whistle boards
 - ⇒ Advance speed restriction signs
 - ⇒ Resume Speed signs
 - ⇒ Yard Limit signs
 - ⇒ Switch Point Indicators
- And any other signals that may otherwise restrict the movement of a train.

SPEED TABLE

Amount of time it takes to travel
1 mile = Miles Per Hour

MIN.	SEC.	MPH
0	30	120
0	31	116
0	33	109
0	34	106
0	36	100
0	38	95
0	40	90
0	42	86
0	45	80
0	48	75
0	51	71
0	55	65
1	0	60
1	5	55
1	12	50
1	20	45
1	30	40
1	35	38
1	40	36
1	45	34
1	52	32
2	0	30
2	9	28
2	18	26
2	30	24
2	44	22
3	0	20
4	0	15
6	0	10
12	0	5