TRAIN DRIVING MODES WORK INSTRUCTION

HITACHI
Hitachi Rail Honolulu JV

Work description: Setting Trains in different modes		
Scope: The purpose of this document is to describe the different train driving modes.		
References: HNL-09547 Manual Train Operation Work Instruction		
PPE and precautions	**Competencies or qualifications**	**Licenses or permits required**
High Visibility Vest, Hard Hat, Safety Shoes	Train Operator	Train Operator
Tools and equipment required		
Train Key, Train Operator Duty Bag		

Train Driving Modes	The trains have three modes of operation plus a "bypass mode": • AUTO: Train operation is under fully automatic driving mode • ATO/ATP: Train movement is under fully automatic driving mode with the exclusion of the door closing and release command which has to be performed by the Train Driver • ATP Manual: The train is driven manually with under ATP protection ○ ATP Stop and Proceed: Stop and Proceed is a special command to be activated by the Driver with the train in ATP mode • BYPASS: The train is driven manually without the ATP protection
Train Operator	***Note*** *If the Train Operator cannot get the train into the intended driving mode, he/she must inform the Train Controller/Yard Controller. When authorized by the OCC, he/she can try changing to another driving mode. When the train has correctly arrived at the other driving mode, it can then be changed back to the intended driving mode. If this is not successful, this must be reported to the Train Controller/Yard Controller for further instructions.* *For details in driving trains manually, please refer to HNL-09547 Manual Train Operation Work Instruction.*
	Warning *All changes in the train's driving mode must be made while the train is at a standstill with brakes activated.* ***Changes must NOT be made to the train's driving mode while the train is in motion.***

Auto Driving Mode Auto Mode	This driving mode is the normal driving mode for passenger service. • To stop a train driving in AUTO drive mode, activate the emergency push-button on the Emergency Drive Console

Manual Driving Modes	For detailed instruction for driving trains manually, please refer to HNL-09547 Manual Train Operation Work Instruction.
ATO / ATP	The ATO/ATP driving mode is not a normal mode for passenger service but can be used during degraded or emergency situations. Train motion is automatic, but train doors closing, and releasing are handled by the driver (Train Operator) through the Emergency Drive Console. The train driver must remain at the open driver panel at all times to prevent passenger access to control of the train.
	Note *To ensure that the train will follow the programmed schedule of the ATS, the train driver must wait for "DWELL EXPIRED" indication to light up before closing the doors.*

Approved By: **Signature:** **Date:**	☐ Director, Operations and Maintenance	☐ Department Manager	☐ Manager, HSE (Operations and Maintenance)

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ATP Manual	The ATP driving mode is not a normal mode for passenger service but can be used during degraded or emergency situations, e.g. train evacuations or removal of faulty trains. In addition to the train doors closing and release, the train driver (Train Operator) controls train movement and speed by means of the Master Controller on the Emergency Drive Console. The ATC panel will beep if the train driver exceeds the speed limit imposed by the ATP system. The train driver has 2 seconds to slow the train to a speed below the limit. Otherwise, the train will automatically be brought to a halt with an emergency brake.
ATP Stop and Proceed	Stop and Proceed is a special command when the train is operating in ATP mode and can be used to avoid stranding the train due to a loss of valid speed limit data from a track circuit (e.g. track circuit failure). This function vitally limits the train speed so that it does not exceed 10 mph while the speed commands received by the ATP are zero for both line and target speed or no cab present at all. During train movement, while in the stop-and-proceed command, the train is continuously searching for the track circuit frequency. During Stop and Proceed command, the movement of the train is maintained until one of the following events occurs: • A valid speed code (other than 0 mph) is received through the track circuit. • Over speed is detected. • The train driver uses the joystick to stop the movement. • The ATP fails or loses power.
Bypass	The bypass driving mode is not normally used for passenger operations due to lack of ATP protection. It may be solely used in limited emergency operations as directed by and closely coordinated with the Train Controller. Extreme caution must be observed when driving a train in bypass mode. The BYPASS driving mode may only be used to drive a train when ATP driving mode is not possible. The driver fully controls and is fully responsible for the operation of the train. The train is provided with a traction control that avoids driving faster than 10 mph. **It is therefore recommended that the traction should always being applied during up-hill movement on the ramps.**
Off Position	It is used on trains which have been stopped for short- or long-term maintenance. The train can be switched on using battery current or by means of collector shoes in contact with energized third rail. All the train's systems will be on, with the exception of the ventilation system and interior lighting (although the emergency lights will be on). The train cannot be driven manually or automatically until the Train Mode Switch has been turned to an operational driving mode.