

Work Instruction - Operations	
<b>MINIMUM OPERATING CONDITIONS</b>	

<b>Work description:</b> This OCC Work Instruction defines the minimum operating requirements for train operations which will be used as the guidelines for the OCC Supervisor to determine whether a train should be allowed to enter or to remain in service when a train equipment fails.		
<b>Scope:</b> This Work Instruction is written specifically for the OCC Supervisor of Honolulu Rail Transit.		
<b>References:</b> N/A		
<b>PPE and precautions</b>	<b>Competencies or qualifications</b>	<b>Licenses or permits required</b>
Nil	OCC Supervisor	Nil
<b>Tools and equipment required</b>		
Nil		

<b>Minimum Operating Requirements</b>	Refer to the below included tables for Minimum Operating Requirements: <ul style="list-style-type: none"> <li><b>Table 1 - Minimum Operating Requirements - Train's Equipment Failure</b></li> <li><b>Table 2 - Minimum Operating Requirements - Onboard Signaling and Telecommunication Equipment Failure</b></li> </ul>
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**Table 1 - Minimum Operating Requirements - Train's Equipment Failure**

MINIMUM OPERATING REQUIREMENTS FOR TRAIN OPERATIONS							
Components Groupings		Defect Scenario	Impact to Service	train entering service	train already in service		
				Y=allow to enter N=NOT allow to enter	Remove from Service Immediately (detrain passengers at next station)	Remove from Service at End of Line (detrain passengers at end of line station)	Comment
Doors		1 pair of doors fail to open or close	Minor	N			send train staff on board to close, lock and isolate failed doors then continue service
		2 pairs of doors fail to open or close <b>(on same side)</b>	Minor	N		Y	send train staff on board to close, lock and isolate failed doors, detrain at the end of the line, then return to the yard
		3 pairs of doors fail to open or close <b>(on same side)</b>	Major	N	Y		send train staff on board to close, lock and isolate failed doors, detrain immediately, then return to the yard

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Components Groupings	Defect Scenario	Impact to Service	train entering service	train already in service		
			Y=allow to enter N=NOT allow to enter	Remove from Service Immediately (detrain passengers at next station)	Remove from Service at End of Line (detrain passengers at end of line station)	Comment
	Train Door(s) cannot be closed	Major	N	Y		send train staff on board to isolate/bypass failed door, detrain immediately, then return to the yard/stabling track
	Obstacle detected	Minor	Y			send train or station staff to remove the obstacle then continue service if fault clears
	Loss of Train Door Closed and Locked Indication / Visual Warning Light	No Impact	Y			continue service only after maintainer confirmed indication fault

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Components Groupings		Defect Scenario	Impact to Service	train entering service	train already in service		
				Y=allow to enter N=NOT allow to enter	Remove from Service Immediately (detrain passengers at next station)	Remove from Service at End of Line (detrain passengers at end of line station)	Comment
Auxiliary Electrical System		Failure of 1 Auxiliary Power Converter or Battery Charger	Major	N	Y		rescue train required to pull /push the failed train back to the yard
Electro-Hydraulic Brake System		Failure of Service Brake (SB) - 1 Braking Unit	Minor	N		Y	return the train to the yard/stabling track
		Failure of Service Brake (SB) - 2 or more Braking Units	Major	N	Y		return the train to the yard/stabling track @10mph
		Failure of Service Brake (SB) - permanent application of SB on 1 bogie	Major	N	Y		send train staff on board to isolate the brakes on the truck then return the train to the yard

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Components Groupings	Defect Scenario	Impact to Service	train entering service	train already in service		
			Y=allow to enter N=NOT allow to enter	Remove from Service Immediately (detrain passengers at next station)	Remove from Service at End of Line (detrain passengers at end of line station)	Comment
	Failure of Service Brake (SB) - permanent application of SB on more than 1 truck	Major	N	Y		send train staff on board to isolate the brakes on the trucks then use rescue train to pull/push the failed train back to the yard/stabling track @10mph
	Failure of Parking Brake (PB) - permanent application of PB on 1 truck	Minor	N	Y		send train staff on board to isolate the brakes on the truck then continue train service
	Failure of Parking Brake (PB) - permanent application of PB on more than 1 truck	Major	N	Y		send train staff on board to isolate the brakes on the trucks then use rescue train to pull/push the failed train back to the yard

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Components Groupings	Defect Scenario	Impact to Service	train entering service	train already in service		
			Y=allow to enter N=NOT allow to enter	Remove from Service Immediately (detrain passengers at next station)	Remove from Service at End of Line (detrain passengers at end of line station)	Comment
	Failure of Emergency Brake (EB) does not apply on 1 bogie	Major	N	Y		return the train to the yard
	Failure of Emergency Brake (EB) does not apply on more than 1 bogie	Major	N	Y		rescue train required to pull/push the failed train back to the yard
	Failure of Emergency Brake (EB) applied when not commanded	Major	N	Y		send train staff on board to isolate the brakes then use rescue train to pull/push the failed train back to the yard
Pneumatic System	Failure of 1 Air Supply Unit	Major	N	Y		return the train to the yard in AUTO
	Failure of 2 Air Supply Units	Major	N	Y		rescue train required to pull/push the failed train back to the yard

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Components Groupings	Defect Scenario	Impact to Service	train entering service	train already in service			Comment
			Y=allow to enter N=NOT allow to enter	Remove from Service Immediately (detrain passengers at next station)	Remove from Service at End of Line (detrain passengers at end of line station)		
Propulsion	Failure of Traction Control Electronic (PCE) in 1 car	Major	N	Y			rescue train required to pull/push the failed train back to the yard @30mph
	Failure of Traction Control Electronic (PCE) in 2 cars	Major	N	Y			rescue train required to pull/push the failed train back to the yard
	Failure of 1 Motor Truck (either one or both Motors)	Major	N	Y			return the train to the yard
	Failure of 2 or more Motor Trucks	Major	N	Y			rescue train required to pull/push the failed train back to the yard @30mph
	Failure of 1 TCMS Control Unit (CCU/LCU/DBU)	Minor	N		Y		return the train to the yard

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Components Groupings	Defect Scenario	Impact to Service	train entering service	train already in service			Comment
			Y=allow to enter N=NOT allow to enter	Remove from Service Immediately (detrain passengers at next station)	Remove from Service at End of Line (detrain passengers at end of line station)		
Train Control & Management System (TCMS)	Failure of 2 or more TCMS Control Units (CCU/LCU/DBU)	Major	N	Y			rescue train required to pull/push the failed train back to the depot in RM
High Voltage Collection & Distribution	Failure of 1 or more Third Rail Collector(s)	Major	N	Y			return the train to the yard @30mph
	Failure of more than 4 Third Rail Collectors on one side per train	Major	N	Y			rescue train required to pull/push the failed train back to the yard
Train Coupler	Semi-permanent Coupler Failure	Major	N	Y			rescue train required to pull the failed train back to the depot
	Automatic Coupler Failure	No Impact	N		Y		no impact unless the train is used as a rescue train - return the train to the yard
Lighting	Failure of Interior Lighting	No Impact	N			Recommended	

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Components Groupings		Defect Scenario	Impact to Service	train entering service	train already in service		
				Y=allow to enter N=NOT allow to enter	Remove from Service Immediately (detrain passengers at next station)	Remove from Service at End of Line (detrain passengers at end of line station)	Comment
		Failure of Exterior Lighting	No Impact	N		Recommended	no impact unless the train is to be driven manually
		Failure of Emergency Lighting	Major	N	Y		return the train to the yard
HVAC		Failure of 1 HVAC Unit	Minor	N		Y	
		Failure of 2 HVAC Units or more	Major	N	Y		return the train to the yard
Train Horn		Train Horn failure	N/A	N			not allow to enter service remain in service until a replacement train is available
Onboard Emergency Equipment		Reset Failure of onboard alarms or emergency devices	Major	N	Y		return the train to the yard
		Failure of 1 or more Emergency Egress Devices	Major	N	Y		return the train to the yard

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				Y=allow to enter N=NOT allow to enter	Remove from Service Immediately (detrain passengers at next station)	Remove from Service at End of Line (detrain passengers at end of line station)	Comment
		Failure of 1 Emergency Call Point in one car	No Impact	Y			
		Failure of 2 or more Emergency Call Points in one car	Minor	N		Y	return the train to the yard
		No onboard Fire Extinguisher	Minor	N		Y	return the train to the yard
Car Body		Broken Window	Major	N	Y		return the train to the yard
		Broken Interiors (seats, handrails, etc.)	Minor	N		Y	return the train to the yard
		Train being hit by External Objects	Major	N	Y		return the train to the yard
		Graffiti	No Impact	Y		Recommended	
		Suspicious Objects found on board	Major	N	Y		return the train to the yard

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**Table 2 - Minimum Operating Requirements - Onboard Signaling and Telecommunication Equipment Failure**

MINIMUM OPERATING REQUIREMENTS FOR TRAIN OPERATIONS							
Components Groupings		Defect Scenario	Impact to Service	train entering service	train already in service		
				Y=allow to enter N=NOT allow to enter	Remove from Service Immediately (detrain passengers at next station)	Remove from Service at End of Line (detrain passengers at end of line station)	Comment
Onboard ATC		Partial Failure of (1) Onboard ATC	Minor	N		Y	send train staff on board to remain stand-by until return to the yard
		Total Failure of (1 or more) Onboard ATC	Major	N	Y		send train staff on board to drive and return to the yard manually
Onboard Wi-Fi		Partial Failure of (1) Onboard Wi-Fi	Minor	N		Y	return the train to the yard
		Total Failure of (1 or more) Onboard Wi-Fi	Major	N	Y		return the train to the yard
Onboard CCTV		Partial Failure of (1) Onboard CCTV	No Impact	N		Recommended	

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		Total Failure of (1 or more) Onboard CCTV	Minor	N		Y	Send train staff on board to monitor and return the train to the yard
Passenger Information System		Failure of (1) Onboard PID	No Impact	Y			
		Failure of (2 or more) Onboard PID	Minor	N		Y	
		Failure of Onboard PA in 1 car	Minor	N		Y	return the train to the yard
		Failure of Onboard PA in 2 or more cars	Major	N	Y		return the train to the yard
Onboard ATC-TCMS Interface		Partial Failure	Minor	N		Y	return the train to the yard
		Total Failure	Major	N	Y		send train staff on board to drive and return to the yard manually

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