

Work Instruction - Operations	
MINIMUM OPERATING CONDITIONS	

Work description: 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.		
Scope: This Work Instruction is written specifically for the OCC Supervisor of Honolulu Rail Transit.		
References: N/A		
PPE and precautions	Competencies or qualifications	Licenses or permits required
Nil	OCC Supervisor	Nil
Tools and equipment required		
Nil		

Minimum Operating Requirements	Refer to the below included tables for Minimum Operating Requirements: <ul style="list-style-type: none"> Table 1 - Minimum Operating Requirements - Train's Equipment Failure Table 2 - Minimum Operating Requirements - Onboard Signaling and Telecommunication Equipment Failure
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Signature:			
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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		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)	
Doors	1)	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)	2 pairs of doors fail to open or close (on same side)	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)	3 pairs of doors fail to open or close (on same side)	Major	N	Y		send train staff on board to close, lock and isolate failed doors, detrain immediately, then return to the yard
	4)	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
	5)	Obstacle detected	Minor	Y			send train or station staff to remove the obstacle then continue service if fault clears
	6)	Loss of Train Door Closed and Locked Indication / Visual Warning Light	No Impact	Y			continue service only after maintainer confirmed indication fault
Auxiliary Electrical System	7)	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	8)	Failure of Service Brake (SB) – 1 Braking Unit	Minor	N		Y	return the train to the yard/stabling track

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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 (detain passengers at end of line station)	Comment
	9)	Failure of Service Brake (SB) – 2 or more Braking Units	Major	N	Y		return the train to the yard/stabling track @10mph
	10)	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 bogie then return the train to the yard
	11)	Failure of Service Brake (SB) – permanent application of SB on more than 1 bogie	Major	N	Y		send train staff on board to isolate the brakes on the bogies then use rescue train to pull/push the failed train back to the yard/stabling track @10mph
	12)	Failure of Parking Brake (PB) – permanent application of PB on 1 bogie	Minor	N	Y		send train staff on board to isolate the brakes on the bogie then continue train service
	13)	Failure of Parking Brake (PB) – permanent application of PB on more than 1 bogie	Major	N	Y		send train staff on board to isolate the brakes on the bogies then use rescue train to pull/push the failed train back to the yard
	14)	Failure of Emergency Brake (EB) does not apply on 1 bogie	Major	N	Y		return the train to the yard
	15)	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
	16)	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

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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)	
Pneumatic System	17)	Failure of 1 Air Supply Unit	Major	N	Y		return the train to the yard in AUTO
	18)	Failure of 2 Air Supply Units	Major	N	Y		rescue train required to pull/push the failed train back to the yard
Propulsion	19)	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
	20)	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
	21)	Failure of 1 Motor Bogie (either one or both Motors)	Major	N	Y		return the train to the yard
	22)	Failure of 2 or more Motor Bogies	Major	N	Y		rescue train required to pull/push the failed train back to the yard @30mph
Train Control & Management System (TCMS)	23)	Failure of 1 TCMS Control Unit (CCU/LCU/DBU)	Minor	N		Y	return the train to the yard
	24)	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	25)	Failure of 1 or more Third Rail Collector(s)	Major	N	Y		return the train to the yard @30mph
	26)	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	27)	Semi-permanent Coupler Failure	Major	N	Y		rescue train required to pull the failed train back to the depot
	28)	Automatic Coupler Failure	No Impact	N		Y	no impact unless the train is used as a rescue train - 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 (detain passengers at end of line station)	Comment
Lighting	29)	Failure of Interior Lighting	No Impact	N		Recommended	
	30)	Failure of Exterior Lighting	No Impact	N		Recommended	no impact unless the train is to be driven manually
	31)	Failure of Emergency Lighting	Major	N	Y		return the train to the yard
HVAC	32)	Failure of 1 HVAC Unit	Minor	N		Y	
	33)	Failure of 2 HVAC Units or more	Major	N	Y		return the train to the yard
Train Horn	34)	Train Horn failure	N/A	N			not allow to enter service remain in service until a replacement train is available
Onboard Emergency Equipment	35)	Reset Failure of onboard alarms or emergency devices	Major	N	Y		return the train to the yard
	36)	Failure of 1 or more Emergency Egress Devices	Major	N	Y		return the train to the yard
	37)	Failure of 1 Emergency Call Point in one car	No Impact	Y			
	38)	Failure of 2 or more Emergency Call Points in one car	Minor	N		Y	return the train to the yard
	39)	No onboard Fire Extinguisher	Minor	N		Y	return the train to the yard
Car Body	40)	Broken Window	Major	N	Y		return the train to the yard
	41)	Broken Interiors (seats, handrails, etc.)	Minor	N		Y	return the train to the yard
	42)	Train being hit by External Objects	Major	N	Y		return the train to the yard

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	43)	Graffiti	No Impact	Y		Recommended	
	44)	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	
		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