MAINTENANCE TECHNICAL SUPPORT CENTER
HEADQUARTERS MAINTENANCE OPERATIONS
UNITED STATES POSTAL SERVICE

Maintenance Management Order

SUBJECT: Explanation of Travel vs Travel with Load in PIVMS Reports

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TO: All PIVMS Sites

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The purpose of this Maintenance Management Order (MMO) is to explain the difference in the terms “Travel” (T) and “Travel with Load” (TWL) in PIVMS Reports. This bulletin applies to Acronym PIVMS and Class Code AA.

This bulletin is informational and contains suggested best practices for maintaining proper operation of vehicles. Work accomplished under this bulletin will be performed under local work order procedures.

Direct any questions or comments concerning this bulletin to the MTSC HelpDesk, online at https://tickets.mtsc.usps.gov/login.php or call (800) 366-4123.

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Attachment: Differentiating Between Travel and Travel with Load

ATTACHMENT

DIFFERENTIATING BETWEEN TRAVEL AND TRAVEL WITH LOAD

NOTE

This bulletin contains technical information requiring PIVMS trained personnel who are familiar with the PIVMS server and Remote Desktop. This bulletin is not intended for use by personnel who have not completed the proper training.

A frequently-asked question relates to the difference between Travel (T) and Travel With Load (TWL) in PIVMS reports.

1.0. TRAVEL (T)

Data in the Travel category is derived from motion being sensed via the motion sensing connections in the PCM vehicle cable. Normally these connections are across the main drive motor in the vehicle. Accurate sensing of motion in this case requires the VAC thresholds be set correctly for Forward and Reverse. This is especially true in Forklifts.

Drive motors in later model DC drive vehicles (e.g. Toyota 5 series vehicles) use electronics where the Drive Motor is controlled using Pulse Width Modulation (PWM). PWM control typically applies pulses of equal amplitude across the drive motor but varies the pulse width to control speed and torque of the motor.

Drive motors in late model AC vehicles (e.g. Toyota 7 or 8 series vehicles) use electronic controllers that generate 3 Phase AC voltage for the 3 phase AC Drive motor. Connecting across two of the three phases going to the motor will generate a sufficient voltage differential “most” of the time. In some cases, the amplitude and phase angle of the two selected phases will be just right to cancel each other out, resulting in the VAC “thinking” the AC Drive motor is not activated.

The solution to this problem uses a 3 phase AC bridge rectifier (PSN 5961-16-000-8920) to rectify the three motor phases, providing a reliable DC output. ID Systems created an AC rectifier kit to address this issue for AC Drive motors. Refer to the Vehicle Installation Overview (VIO) for detailed installation instructions.

2.0. TRAVEL WITH LOAD (TWL)

Movement detection in the Travel With Load category comes from Motion (described earlier) and, if the Odometer is enabled in Vehicle Advanced Setup, speed input from the Proximity sensor or Vehicle Interface Module (VIM) cable (PSN 5963-12-000-7591) direct connection. If Odometer is not enabled in Vehicle Advanced Setup, then only the motion input is used.

For Tow Motors, load is derived from the Tow Sensor. A Tow Session starts when the Tow Sensor is continuously blocked for at least 30 seconds. A Tow Session ends when the Tow Sensor is continuously unblocked for 30 seconds. All Travel during a Tow Session counts toward Travel With Load.

For Forklifts, load is a minimum 150 pounds being continuously present on the forks for 30 seconds or longer.

It is important to note that Lift motor input is not used in TWL. Lift motor input is used only for calculating Lift Counts.