



Maintenance Management Order

SUBJECT: Preventive Maintenance (PM) Guidelines for Lockheed Martin (LM) Tray Management System (TMS) - Tray Transport Diverter (TT) – Conveyor Divert

DATE: August 16, 2010

NO: MMO-076-10

TO: Lockheed Martin TMS Sites

FILE CODE: TM05

ron:mm09028ad

This Maintenance Management Order (MMO) provides PM Guidelines for LM TMS TT Conveyor Divert. Acronym is TT. Class code is IA.

The workhours represented in this MMO reflect the maximum workhours required to maintain the equipment. Given local conditions, management may modify task frequencies.

The minimum maintenance skill level required to perform each task is included in the Minimum Skill Level column of each checklist. This does not preclude higher level employees from performing any of this work.

Maintenance Managers are to use these preventive maintenance guidelines when preparing the route sheets for local maintenance personnel. It is the responsibility of each Maintenance Manager to ensure all WARNINGS, CAUTIONS, and NOTES are included with each applicable task as part of the preparation of any local route sheets.

WARNING

Various products requiring Material Safety Data Sheets (MSDS) may be utilized during the performance of the procedures in this bulletin. Ensure the current MSDS for each product used is on file and available to all employees. When reordering such a product, it is suggested that current MSDS be requested. Refer to MSDS for appropriate personal protective equipment.

WARNING

The use of compressed or blown air is prohibited. An alternative cleaning method such as a HEPA filtered vacuum cleaner, a damp rag, lint-free cloth, or brush must be used in place of compressed or blown air.

For questions or comments concerning this bulletin contact the MTSC HelpDesk, either online at **MTSC>HELPDESK>Create/Update Tickets** or call (800) 366-4123.



Robert E. Albert
Manager
Maintenance Technical Support Center
Maintenance Policies and Programs

Attachments:

1. Summary of Workload Estimate
2. LM TMS TT Conveyor Divert: Master Checklist: 03-TT-IA-101-M: Monthly
3. LM TMS TT Conveyor Divert: Master Checklist: 03-TT-IA-102-M: Semi-Annual

ATTACHMENT 1

SUMMARY

WORKLOAD ESTIMATE

FOR

LM TMS TT CONVEYOR DIVERT

**SUMMARY
WORKLOAD ESTIMATE**

Days	Routine Servicing (hrs/yr)	Repair* (hrs/yr)	Total Servicing & Repair Time (hrs/yr)	Nonproductive Time ** (hrs/yr)	Total Servicing Per Machine (hrs/yr)
5 Day	2.47	0.74	3.21	0.32	3.53
6 day	2.47	0.74	3.21	0.32	3.53
7 day	2.47	0.74	3.21	0.32	3.53

NOTES

*Repair estimates based on 30% of servicing.

**Based on 10% of total servicing and repair.

ATTACHMENT 2

LM TMS TT CONVEYOR DIVERT

MASTER CHECKLIST

03-TT-IA-101-M

MONTHLY

Time Total: 10 Minutes per module

U.S. Postal Service Maintenance Checklist	IDENTIFICATION														
	WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE	
	0	3	T	T					I	A	1	0	1	M	
Equipment Nomenclature LM TMS TT			Equipment Model Conveyor Divert					Bulletin Filename MM09028AD			Occurrence Monthly				

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.

SAFETY STATEMENT

- | | | | |
|----|--|---|-----|
| 1. | <p>COMPLY WITH ALL SAFETY PRECAUTIONS. Disconnect power and apply lockouts when required by this instruction. Refer to current local lockout procedures to properly shut down and lock out this machine. Open equipment and inspect dust conditions. Check for suspicious dust or unusual debris. If any unusual substance is found notify supervisor prior to proceeding with any further action on the equipment.</p> <p>THE USE OF COMPRESSED OR BLOWN AIR IS PROHIBITED. When cleaning is required, an alternative cleaning method such as a HEPA filtered vacuum cleaner, a damp cloth, lint-free cloth or brush, must be used in place of compressed or blown air. Report safety deficiencies to your supervisor immediately upon detection.</p> | 2 | All |
|----|--|---|-----|

WARNING

Be cautious when working around or on equipment when power has been applied.

- | | | | | |
|--------------|----|---|---|---|
| IDLER ROLLER | 2. | <p>Check idler rollers for debris.</p> <ol style="list-style-type: none"> On the Cell Control PC, enter login ID and Password. On the TMS Main Menu, select Cell Controller. On the CELL STATUS screen, select the Cell Offline button. Select the Conveyor button. On the CONVEYOR MANAGEMENT screen, select the Device Id(s) (and select the zone(s) if applicable) for the conveyor being checked. Select the Force Output button. The conveyor (zone(s)) selected should now be operating. Check drive and idler rollers for attached debris. | 3 | 9 |
|--------------|----|---|---|---|

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Equipment Nomenclature LM TMS TT			Equipment Model Conveyor Divert					Bulletin Filename MM09028AD			Occurrence Monthly				

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
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8. Power down and lock out power as prescribed by the current local lockout/restore procedures.
9. Remove any dirt/debris found. If required, clean the roller with soap and water.

WARNING

Be cautious when working around or on equipment when power has been applied.

10. Restore equipment to service as prescribed by the current local lockout/restore procedures.

DRIVE ROLLER 3. **Check drive roller and O-rings.** 4 9

1. On the Cell Control PC, enter login ID and Password.
2. On the TMS Main Menu, select Cell Controller.
3. On the CELL STATUS screen, select the Cell Offline button.
4. Select the Conveyor button.
5. On the CONVEYOR MANAGEMENT screen, select the Device Id(s) (and select the zone(s) if applicable) for the conveyor being checked.
6. Select the Force Output button. The conveyor (zone(s)) selected should now be operating.
7. Check for noise. If roller is excessively noisy, notify supervisor, it may need to be replaced in accordance with section 9.6.4 of the TMS Conveyor maintenance manual.
8. Check fastening nuts for movement. If the fastening nuts rotate when the rollers start and stop, power down the affected conveyor segment and lock out its electrical power as prescribed by the current local lockout/restore procedures. Retighten the

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nuts to 35 to 37 foot-pounds. After retightening the nuts, restore the equipment to service as prescribed by the current local lockout/restore procedures.

9. Check for sluggish movement of trays in both the normal direction and the diverted direction. If sluggish movement is present, check for broken or slipping O-rings, and check for malfunctioning O-rings. If any of these conditions exist, notify supervisor, as the O-ring(s) may need to be replaced.
10. After completing all checks, select OK on the TMS Error screen.
11. On the CONVEYOR MANAGEMENT screen, select Cell Status button.
12. On the CELL STATUS screen, select Cell Online button.
13. Select Exit button.
14. On the TMS Main Menu, select Log Off button.

CLEAN UP

4. **Clean up.** Ensure all tools, lubricants, rags, etc., are removed from the work area. Notify supervisor of any deficiencies. 1 All

ATTACHMENT 3

LM TMS TT CONVEYOR DIVERT

MASTER CHECKLIST

03-TT-IA-102-M

SEMI-ANNUAL

Time Totals:

14 Minutes per floor level module
14 Minutes per 1-4 zone elevated module
15 Minutes per 5-8 zone elevated module

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Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.

SAFETY STATEMENT	1.	COMPLY WITH ALL SAFETY PRECAUTIONS. Disconnect power and apply lockouts when required by this instruction. Refer to current local lockout procedures to properly shut down and lock out this machine. Open equipment and inspect dust conditions. Check for suspicious dust or unusual debris. If any unusual substance is found notify supervisor prior to proceeding with any further action on the equipment.	2	All			
		THE USE OF COMPRESSED OR BLOWN AIR IS PROHIBITED. When cleaning is required, an alternative cleaning method such as a HEPA filtered vacuum cleaner, a damp cloth, lint-free cloth or brush, must be used in place of compressed or blown air. Report safety deficiencies to your supervisor immediately upon detection.					
POWER DOWN	2.	Power down and lock out power and compressed air. Power down the affected conveyor segment and lock out its electrical power and compressed air and bleed the air line as prescribed by the current local lockout/restore procedures.	3	9			
PHOTO EYES	3.	Clean photoeyes and reflectors. Using a clean, dry cloth, clean dust and dirt from the photo eyes and reflectors.	* 1	9			
			** 1				
			*** 2				
		*1 minute/floor level module					
		**1 minute/1-4 zone elevated module					
		***2 minutes/5-8 zone elevated module					
AIR FILTER	4.	Clean and adjust air filter regulator. 1. Remove the bowl and filter from the filter/regulator and clean filter with vacuum, brush, clean cloth, or paper wipe. 2. Clean inside of regulator bowl with a clean cloth or paper wipe. 3. Reinstall bowl and filter in filter/regulator.	3	9			

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4. Remove lockout device from compressed air source to the filter/regulator and restore air pressure to the filter/regulator.
5. Adjust air regulator to 85 to 90 PSI.
6. Listen for escaping air from the pneumatic system. A leak is present if abnormally loud hissing sound is emitted while the module is powered, but not operating. If a leak is observed, notify supervisor.

RETURN TO
SERVICE

5. **Restore equipment to service.** Restore equipment to service as prescribed by the current local lockout/restore procedures. 4 9

CLEAN UP

6. **Clean up.** Ensure all tools, lubricants, rags, etc., are removed from the work area. Notify supervisor of any deficiencies. 1 All