



Maintenance Management Order

SUBJECT: Preventive Maintenance (PM) Servicing Guidelines for
Lockheed Martin (LM) Tray Management System (TMS)
Tray Transport Diverter (TT) Conveyor Right Angle
Transfer (RAT) Modules
TO: LM TMS Sites

DATE: September 25, 2010
NO: MMO-078-10
FILE CODE: TM05
rorn:mm09070ad

This Maintenance Management Order (MMO) provides PM Servicing Guidelines for LM TMS Tray Transport Diverter (TT) Conveyor Right Angle Transfer (RAT) Modules.

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 Right Angle Transfer (RAT) Modules: Master Checklist: 03-TT-IA-601-M: Monthly
3. LM TMS TT Conveyor Right Angle Transfer (RAT) Modules: Master Checklist: 03-TT-IA-602-M: Semi-Annual

ATTACHMENT 1

SUMMARY

WORKLOAD ESTIMATE

FOR

LM TMS TT CONVEYOR RIGHT ANGLE TRANSFER (RAT) MODULES

SUMMARY WORKLOAD ESTIMATE

Floor and Zone 1-4 Elevated Level Modules

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	2.66	0.80	3.46	0.34	3.81
6 Day	2.66	0.80	3.46	0.34	3.81
7 Day	2.66	0.80	3.46	0.34	3.81

5-8 Zone Elevated Modules

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	2.70	0.81	3.51	0.35	3.86
6 Day	2.70	0.81	3.51	0.35	3.86
7 Day	2.70	0.81	3.51	0.35	3.86

NOTES

*Repair estimates based on 30% of servicing.

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

ATTACHMENT 2

LM TMS TT CONVEYOR RIGHT ANGLE TRANSFER (RAT) MODULES

MASTER CHECKLIST

03-TT-IA-601-M

MONTHLY

Time Total: 11 Minutes per module

U.S. Postal Service Maintenance Checklist	IDENTIFICATION														
	WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE	
	0	3	T	T						I	A	6	0	1	M
Equipment Nomenclature LM TMS TT			Equipment Model Conveyor Right Angle Transfer						Bulletin Filename MM09070AD			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. **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.

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.
- 2 All

POWER DOWN

2. **Power down and lock out power and compressed air** as prescribed by the current local lockout/restore procedures.

CROSS BELTS

3. **Clean cross belts.**
 1. Check cross belts for attached debris. Remove any debris found. If required, clean with soap and water.
 2. Check the cross belt tension for slippage of the cross belts. If slippage of the cross belts is observed, perform following:
 - a. Place the hook of a tension meter under each belt and lift it up about 2 inches above its normal position. The tension meter should read between 3 and 4 pounds.
 - b. If the tension is below the range specified, the cross belt must be tightened. If the tension is above the range specified, the cross belt must be loosened. Small adjustments can be made with the anchor spring.

U.S. Postal Service Maintenance Checklist	IDENTIFICATION														
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	0	3	T	T						I	A	6	0	1	M
Equipment Nomenclature LM TMS TT		Equipment Model Conveyor Right Angle Transfer						Bulletin Filename MM09070AD				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.

- | | | | | |
|---------|----|--|-----|---|
| O-RINGS | 4. | Check all O-rings for deficiencies. | * 1 | 9 |
| | | 1. Remove debris. | | |
| | | 2. Check for slippage when running heavy tray (50 lbs) on rollers. | | |
| | | * Time per zone. | | |

WARNING

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

- | | | | | |
|-------------------|----|---|---|-----|
| 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 |

U.S. Postal Service Maintenance Checklist	IDENTIFICATION														
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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.

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ATTACHMENT 3

LM TMS TT CONVEYOR RIGHT ANGLE TRANSFER (RAT) MODULES

MASTER CHECKLIST

03-TT-IA-602-M

SEMI-ANNUAL

Time Total:

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

U.S. Postal Service Maintenance Checklist	IDENTIFICATION														
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	0	3	T	T						I	A	6	0	2	M
Equipment Nomenclature LM TMS TT		Equipment Model Conveyor Right Angle Transfer						Bulletin Filename MM09070AD				Occurrence Semi-Annual			

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** as prescribed by the current local lockout/restore procedures.
- 3 9

PHOTO EYES

3. **Clean photo eyes and reflectors.** Using a clean, dry cloth, clean dust, and dirt from the photo eyes and reflectors.
- * 1 9

** 1

* Minute per floor level module

** Minute for 1-4 zone elevated module

*** Minutes for 5-8 zone elevated module

*** 2

WARNING

Eye protection (goggles or face shield) must be worn when releasing fluids from the filter regulator separator (FRS) bowl.

AIR REGULATOR

4. **Clean and adjust air regulator that controls air service to the Right Angle Transfer (RAT) module being serviced.**
- 3 9

1. Turn off and lock out the feed/source side of the regulator.

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					Run Hours	Pieces Fed (000)	Freq.

2. Remove the bowl and air deflector from the regulator.
3. Clean air deflector and inside of regulator bowl with a clean cloth or paper wipe.
4. Replace air deflector and bowl.
5. Remove lockout device from compressed air source to the regulator and restore air pressure to the regulator.
6. Adjust air regulator to 85 to 90 PSI.
7. Listen for air escaping 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.

WARNING

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

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