



# Maintenance Management Order

**SUBJECT:** Preventive Maintenance (PM) Servicing Guidelines for  
Lockheed Martin (LM) Tray Management System (TMS) -  
Tray Transport Powered Belt (TT) - ECA Belt Conveyor

**DATE:** August 2, 2010

**NO:** MMO-075-10

**TO:** All LM TMS Sites

**FILE CODE:** TM05

ron:mm09027ad

This Maintenance Management Order (MMO) provides Preventive Maintenance Guidelines for the Lockheed Martin (LM) Tray Management System (TMS) - Tray Transport Powered Belt (TT) - ECA Belt Conveyor.

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

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.



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Manager  
Maintenance Technical Support Center  
Maintenance Policies and Programs

Attachments:

1. Summary Workload Estimate
2. LM TMS TT ECA Belt Conveyor: Master Checklist: 03-TT-GA-001-M: Weekly
3. LM TMS TT ECA Belt Conveyor: Master Checklist: 03-TT-GA-002-M: Quarterly

**ATTACHMENT 1**

**SUMMARY**

**WORKLOAD ESTIMATE**

**FOR**

**LM TMS TT ECA BELT CONVEYOR**

**SUMMARY  
WORKLOAD ESTIMATE**

<b>Days</b>	<b>Routine Servicing (hrs/yr)</b>	<b>Repair* (hrs/yr)</b>	<b>Total Servicing &amp; Repair Time (hrs/yr)</b>	<b>Nonproductive Time ** (hrs/yr)</b>	<b>Total Servicing Per Machine (hrs/yr)</b>
<b>5 Day</b>	22.67	6.80	29.47	2.95	32.41
<b>6 day</b>	22.67	6.80	29.47	2.95	32.41
<b>7 day</b>	22.67	6.80	29.47	2.95	32.41

**NOTES**

\*Repair estimates based on 30% of servicing.

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

**ATTACHMENT 2**

**LM TMS TT ECA BELT CONVEYOR**

**MASTER CHECKLIST**

03-TT-GA-001-M

WEEKLY

Time Total: 25 Minutes

U.S. Postal Service Maintenance Checklist	IDENTIFICATION													
	WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
	0	3	T	T					G	A	0	0	1	M
Equipment Nomenclature LM TMS TT			Equipment Model ECA Belt Conveyor					Bulletin Filename MM09027AD			Occurrence Weekly			

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 lockout power** as prescribed by the current local lockout/restore procedures. 1 9
- PULLEY CHECK 3. **Check end pulleys, snub and take-up pulleys.** Verify the pulley shell is centered within the conveyor frame. If the pulley is not centered, realign and retighten the hardware attaching the shaft to the end plate. 5 9
- BELT SPLICE CHECK 4. **Check belt splice.** Check belt splice for hanging or missing lacing. If the lacing is damaged, repair/replace as needed. 1 9

**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. 1 9

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Equipment Nomenclature LM TMS TT		Equipment Model ECA Belt Conveyor						Bulletin Filename MM09027AD				Occurrence Weekly			

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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BELT CHECK      6. **Check belting.**      5      9

1. Check belt surface for attached debris. Stop belt, and remove any debris found with soap and water.
2. Check belt tracking while the belt is moving. Belt tracking is correct if the belt is greater than 1/2 inch away from the conveyor side guard. If belt is bi-directional, check tracking in both directions.
3. Check belt tension. If belt tension is excessive, the edge of the belt will curl. If belt tension is insufficient, the belt will slip. Tension is correct when the take-up is tightened just beyond where the belt slips on the drive pulley when the conveyor is loaded.
4. Check the edge of the belt for tears or excessive fraying.

ROLLER CHECK      7. **Check carrier and idler rollers.**      2      9

1. Check rollers for noisy operation. If the roller is excessively noisy, notify supervisor.
2. Check rollers for debris attached to the roller.
3. Power down and lock out power. Power down the affected conveyor segment and lock out its electrical power prescribed by the current local lockout/restore procedures.
4. Clean conveyor with soap and water, if required.

**WARNING**

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

RETURN TO SERVICE      8. **Restore equipment to service.** Restore equipment to service as prescribed by the current local lockout/restore procedures.      4      9

MOTORIZED PULLEY CHECK      9. **Check motorized pulley.**      3      9

1. Check the condition of the lagging. A large deposit of black residue under the conveyor

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indicates excessive lagging deterioration. If the lagging wears off, there will be slippage of the belt on the pulley.

2. Check for oil leaks around shafts and seals. If leaks are observed, notify supervisor.
3. Check for excessive noise generated by the motorized pulley. If the motorized pulley generates excessive noise, notify supervisor.

#### CLEAN UP

10. **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 ECA BELT CONVEYOR**

**MASTER CHECKLIST**

03-TT-GA-002-M

QUARTERLY

Time Total: 15 Minutes

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	0	3	T	T					G	A	0	0	2	M	
Equipment Nomenclature LM TMS TT			Equipment Model ECA Belt Conveyor					Bulletin Filename MM09027AD			Occurrence QUARTERLY				

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.

**WARNING**

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

**NOTE**

Operate belt conveyor at least 15 minutes before powering it down and locking it out.

## POWER DOWN

2. **Power down and lock out power** as prescribed by the current local lockout/restore procedures. 1 9

**WARNING**

Discard solvent soaked materials according to local procedures to prevent spontaneous combustion.

BEARING  
INSPECTION

3. **Check and lubricate take-up and flange bearings.** 3 9
1. After the belt conveyor has operated for at

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least 15 minutes, check take-up and flange bearing housings for excessive heat by checking with IR thermometer. Consistently taking readings at the same approximate point, normal operating temperatures after 15 minutes for similar bearings should baseline approximately equal and range from approximately 90 – 100 degrees. If a bearing temperature is higher than similar bearings, notify supervisor.

- Using a paper wipe, remove any dust and dirt from the grease fitting.

#### CAUTION

**Do not over fill bearings with grease. Over filling of bearings causes bearing to over heat and may damage grease seals.**

- Using lithium based No. 2 grease in a grease gun rated at approximately 20 strokes per 1 ounce; insert not more than 1/20 of an ounce of grease into fitting.
- Verify grease is not forced out around seals. If excessive quantity of grease has been applied to bearing, remove fitting to allow excess grease to escape.
- Using a paper wipe, remove any residual grease from fitting, casing, etc.

- |           |    |   |   |   |
|-----------|----|---|---|---|
| PHOTOEYES | 4. | <b>Clean photo eyes and reflectors.</b> Using a clean, dry cloth, clean dust and dirt from the photo eyes and reflectors. | 1 | 9 |
|-----------|----|---|---|---|

#### WARNING

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

- |                   |    |  |   |   |
|-------------------|----|--|---|---|
| RETURN TO SERVICE | 5. | <b>Restore equipment to service.</b> Restore equipment to service as prescribed by the current local lockout/restore procedures. | 4 | 9 |
|-------------------|----|--|---|---|

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- |              |    |   |   |     |  |  |  |
|--------------|----|---|---|-----|--|--|--|
| E-STOP CHECK | 6. | <b>Check emergency stop switches.</b>   | 3 | 9   |  |  |  |
|              |    | 1. With conveyor section running, push the emergency stop switch and verify it stops.   |   |     |  |  |  |
|              |    | 2. Reset the emergency stop switch activated.   |   |     |  |  |  |
|              |    | 3. Repeat steps 1 and 2 utilizing the emergency stop cords.   |   |     |  |  |  |
| CLEAN UP     | 7. | <b>Clean up.</b> Ensure all tools, lubricants, rags, etc., are removed from the work area. Notify supervisor of any deficiencies. | 1 | All |  |  |  |