

MAINTENANCE TECHNICAL SUPPORT CENTER
HEADQUARTERS MAINTENANCE OPERATIONS
UNITED STATES POSTAL SERVICE



Maintenance Management Order

SUBJECT: Preventive Maintenance Guidelines for the Mail
Processing Infrastructure (MPI)

DATE: May 31, 2013

NO: MMO-056-13

TO: All MPI (LAN) Offices

FILE CODE: Z2

dgue:mm13016aa

| Online Change Record | | |
|----------------------|--------|---|
| Change # | Date | Description of Change |
| 1 | 3/7/22 | Attachment 2, quarterly, item 4, deleted redundant Step 3e. |

This Maintenance Management Order (MMO) provides Preventive Maintenance (PM) guidelines for the Mail Processing Infrastructure. This MMO supersedes MMO-026-10.

The workhours indicated in the workload estimate (Attachment 1) reflect the maximum annual workhours required to maintain each system. Management may modify task frequencies to address local conditions.

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.

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.

WARNING

Steps contained in this bulletin may require the use of Personal Protective Equipment (PPE). Refer to the current Electrical Work Plan (EWP) MMO for appropriate PPE requirements.

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.

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

HQ Maintenance Operations

- Attachments: 1. Summary Workload Estimate
2. Master Checklist: 03-LAN-AA-001-M: Weekly
 3. Master Checklist: 03-LAN-AA-002-M: Quarterly
 4. Master Checklist: 03-LAN-AA-003-M: Annual

ATTACHMENT 1

SUMMARY

WORKLOAD ESTIMATE

FOR MPI

SUMMARY WORKLOAD ESTIMATE FOR MPI

Weekly Hours Per Site

| Operation | Routine Servicing (Hrs/Yr) | Repair* (Hrs/Yr) | Routine Servicing + Repair Time (Hrs/Yr) | Non-productive Time** (Hrs/Yr) | Total Servicing Per System (Hrs/Yr) |
|-----------|----------------------------|------------------|--|--------------------------------|-------------------------------------|
| 7 | 40 | 12.0 | 52.0 | 5.2 | 57.2 |
| | | | | | |

Quarterly and Annual Hours Per MPI MDF/IDF

| Operation | Routine Servicing (Hrs/Yr) | Repair* (Hrs/Yr) | Routine Servicing + Repair Time (Hrs/Yr) | Non-productive Time** (Hrs/Yr) | Total Servicing Per System (Hrs/Yr) |
|-----------|----------------------------|------------------|--|--------------------------------|-------------------------------------|
| 7 | 4.8 | 1.44 | 6.24 | 0.62 | 6.86 |
| | | | | | |

Total time equals the total number of Intermediate Distribution Frames (IDF) and Main Distribution Frames (MDF) per site times multiplied by 6.86 plus 57.2 hours.

Example:

6 IDFs + 1 MDF = 7 Distribution Frames X 6.86 Hrs per Distribution Frame = 48.02 Hrs

Total Time = 48.02 Hrs + 57.2 Hrs = 105.22 Hrs

NOTES

*Repair estimates based on 30% of servicing.

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

ATTACHMENT 2

MASTER CHECKLIST

03-LAN-AA-001-M

WEEKLY

Time Total: 46 Minutes

| | | | | | | | | | | | | | | |
|---|-----------------|---|-------------------|---|---|--|--------------------------------|--|------------|---|---------------------|---|---|------|
| U.S. Postal Service Maintenance Checklist | IDENTIFICATION | | | | | | | | | | | | | |
| | WORK CODE | | EQUIPMENT ACRONYM | | | | | | CLASS CODE | | NUMBER | | | TYPE |
| | 0 | 3 | L | A | N | | | | | A | A | 0 | 0 | 1 |
| Equipment Nomenclature MPI Cabinet | Equipment Model | | | | | | Bulletin Filename mm13016aa | | | | Frequency 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) | Weeks |

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.

3 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 or a damp rag must be used in place of compressed or blown air. A lint-free cloth or brush may be used on optical equipment only when other cleaning methods cannot be used. Report safety deficiencies to your supervisor immediately upon detection.

MAIL PROCESSING INFRASTRUCTURE (MPIW)

- 2. Verify all installed switches are live and responding to Watch It.**
 - Log into MPIW.
 - Verify all installed switches are live and responding to Watch It.

For any status light not in a green condition, access that device and investigate.
 - Review Kiwi Log Viewer.
 - Open Kiwi Log Viewer and verify that Kiwi is logging messages.
 - Inspect Kiwi log and note warning messages, report relevant error to local management, create 05 work order and then take appropriate action as required to resolve problems.

40 PS
10

- 3. Log off.** Log off MPIW. Keep MPIW powered on.

3 All

ATTACHMENT 3

MASTER CHECKLIST

03-LAN-AA-002-M

QUARTERLY

Time Total: 52 Minutes

| | | | | | | | | | | | | | | | | |
|---|----------------|-----------------|-------------------|---|---|--|--|--------------------------------|------------|---|--------|------------------------|---|------|---|--|
| U.S. Postal Service Maintenance Checklist | IDENTIFICATION | | | | | | | | | | | | | | | |
| | WORK CODE | | EQUIPMENT ACRONYM | | | | | | CLASS CODE | | NUMBER | | | TYPE | | |
| | 0 | 3 | L | A | N | | | | | A | A | 0 | 0 | 2 | M | |
| Equipment Nomenclature MPI Cabinet | | Equipment Model | | | | | | Bulletin Filename mm13016aa | | | | Frequency 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) | Weeks |

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.

3 All

THE USE OF COMPRESSED OR BLOWN AIR IS PROHIBITED.

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CABINET

2. **Remove MPI IDF or MDF cabinet filter.**

15 PS
10**NOTE**

Structured wiring IDF or MDF cabinets and also MPI Phase 3 Lite may be of a different design. Clean the cabinet filter that filters the air drawn into the cabinet.

Remove the MPI IDF or MDF cabinet filter in back of the cabinet and in front of the fan, clean both sides with HEPA filtered vacuum cleaner and replace. On the gray Rittal cabinets deployed in most offices, the filter cover is held in place by 2 tabs on each side. On the black Damac cabinets deployed in Earthquake Zones 3 and 4, the filter can simply be lifted out.

UPS

3. **Check UPS.**

1 PS
10**CAUTION**

Do not test battery by unplugging UPS. This removes equipment ground and may cause damaging surges when the UPS is reconnected.

| | | | | | | | | | | | | | | | |
|---|--|-----------------|---|-------------------|---|---|--|--------------------------------|--|------------|---|------------------------|---|---|------|
| U.S. Postal Service Maintenance Checklist | | IDENTIFICATION | | | | | | | | | | | | | |
| | | WORK CODE | | EQUIPMENT ACRONYM | | | | | | CLASS CODE | | NUMBER | | | TYPE |
| | | 0 | 3 | L | A | N | | | | | A | A | 0 | 0 | 2 |
| Equipment Nomenclature MPI Cabinet | | Equipment Model | | | | | | Bulletin Filename mm13016aa | | | | Frequency 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) | Weeks |

If the UPS is not a Tripp Lite SmartPro, follow the manufacturer's instructions provided with the UPS. The MDF cabinet may or may not have an UPS.

NOTE

Consult the Owner's Manual provided with UPS to determine location of indicators and switches since this will vary with model.

1. Ensure the UPS battery is fully charged. On the Tripp Lite SmartPro UPS, at the bottom of the MPI cabinet, press the Mute/Test switch, hold it down for 5 seconds and then release. The UPS will momentarily switch to battery to test its charge. If the Red battery fail indicator turns on, the battery is low or the UPS is defective.
2. Close cabinet doors securely when finished.
3. Open work order to investigate and correct problems with UPS.

MAIL
PROCESSING
INFRASTRUCTURE
(MPI)

4. **Verify operations of all MPI Cisco switches.** 30 PS
10
 1. Log on to the MPIW computer.
 2. Open a telnet session to each MPI switch.
 3. Perform following commands on each switch:
 - a. Show env all.
 - 1) Display status of the Fan/Power Supply and Temp of the switch.
 - 2) The following information should be displayed. Report any and all discrepancies. Take appropriate corrective actions.
 - a) #sh env all.
 - b) FAN is OK.
 - c) TEMPERATURE is OK.
 - d) POWER is OK.
 - e) RPS is NOT PRESENT.

| | | | | | | | | | | | | | | | |
|---|--|-----------------|---|-------------------|---|---|--|--------------------------------|--|------------|---|------------------------|---|---|------|
| U.S. Postal Service Maintenance Checklist | | IDENTIFICATION | | | | | | | | | | | | | |
| | | WORK CODE | | EQUIPMENT ACRONYM | | | | | | CLASS CODE | | NUMBER | | | TYPE |
| | | 0 | 3 | L | A | N | | | | | A | A | 0 | 0 | 2 |
| Equipment Nomenclature MPI Cabinet | | Equipment Model | | | | | | Bulletin Filename mm13016aa | | | | Frequency 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) | Weeks |

b. Show interface status.

- 1) Verify defined/connected ports match local MPI documentation spreadsheet.
- 2) Ensure all defined ports are connected in the proper speed/duplex/trunking modes.
- 3) Generate work order to investigate and correct any differences between the switches and the documentation spreadsheet.

c. Show interface.

- 1) Check all interfaces for input/output errors.
- 2) Review the command results for excessive number errors. Report excessive error conditions. Take appropriate corrective actions.

d. Show cdp neighbor.

- 1) Ensure the switch can see the MPI switches directly connected to it.
- 2) Review the output of the command to ensure that all trunks are connected. Report any and all faulty trunks. Take appropriate corrective actions.

4. Back up MPI switch configuration to MPIW.

- a. Start tftp server on MPIW.
- b. Copy startup config to MPIW.

CLEAN UP

5. **Clean up.** Ensure all tools, lubricants, rags, etc., are removed from the work area. Report all deficiencies to your supervisor.

3 All

ATTACHMENT 4

MASTER CHECKLIST

03-LAN-AA-003-M

ANNUAL

Time Total: 80 Minutes

| | | | | | | | | | | | | | | | |
|---|-----------------|---|-------------------|---|---|--|--------------------------------|--|------------|---|---------------------|---|---|------|---|
| U.S. Postal Service Maintenance Checklist | IDENTIFICATION | | | | | | | | | | | | | | |
| | WORK CODE | | EQUIPMENT ACRONYM | | | | | | CLASS CODE | | NUMBER | | | TYPE | |
| | 0 | 3 | L | A | N | | | | | A | A | 0 | 0 | 3 | M |
| Equipment Nomenclature MPI Cabinet | Equipment Model | | | | | | Bulletin Filename mm13016aa | | | | Frequency 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) | Weeks |

SAFETY STATEMENT

- 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.

3 All

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When cleaning is required, an alternative cleaning method such as a HEPA filtered vacuum cleaner or a damp rag must be used in place of compressed or blown air. A lint-free cloth or brush may be used on optical equipment only when other cleaning methods cannot be used. Report safety deficiencies to your supervisor immediately upon detection.

CABINET

- Vacuum cabinet.**
Using HEPA filtered vacuum cleaner, vacuum areas of dust accumulation on outside of cabinet. Open rear door of cabinet and carefully vacuum all reachable surfaces. Avoid damaging or displacing electrical cords and communication cables inside. Open front door of cabinet and carefully vacuum reachable surfaces. Do not touch communications cables or connectors with vacuum. Do not open fiber trays.

31 PS
10

SWITCHES

- Check fans.** Visually check that all fans on switches are running.

1 PS
10

CABLES

- Inspect cable labeling.** Ensure patch cables are labeled and dressed. Take corrective action if required.

12 PS
10

MAIL PROCESSING INFRASTRUCTURE (MPI)

- Verify operations of all MPI Cisco switches.**
 - Log on to the MPIW computer.
 - Open a telnet session to each MPI switch.
 - Perform following commands on each switch:
 - Show env all.

30 PS
10

| | | | | | | | | | | | | | | | |
|---|--|-----------------|---|-------------------|---|---|--|--------------------------------|--|------------|---|---------------------|---|---|------|
| U.S. Postal Service Maintenance Checklist | | IDENTIFICATION | | | | | | | | | | | | | |
| | | WORK CODE | | EQUIPMENT ACRONYM | | | | | | CLASS CODE | | NUMBER | | | TYPE |
| | | 0 | 3 | L | A | N | | | | | A | A | 0 | 0 | 3 |
| Equipment Nomenclature MPI Cabinet | | Equipment Model | | | | | | Bulletin Filename mm13016aa | | | | Frequency 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) | Weeks |

- 1) Display status of the Fan/Power Supply and Temp of the switch.
- 2) Review the command results for excessive number errors. Report excessive error conditions and take appropriate corrective actions.
- b. Show interface status.
 - 1) Verify defined/connected ports match local MPI documentation spreadsheet.
 - 2) Ensure all defined ports are connected in the proper speed/duplex/trunking modes.
 - 3) Generate work order to investigate and correct any differences between the switches and the documentation spreadsheet.
- c. Show interface.
 - 1) Check all interfaces for input/output errors.
 - 2) Review the command results for excessive number errors. Report excessive error conditions and take appropriate corrective actions.
- d. Show cdp neighbor.
 - 1) Ensure the switch can see the MPI switches directly connected to it.
 - 2) Review the output of the command to ensure that all trunks are connected. Report any and all faulty trunks and take appropriate corrective actions.
- e. Show interface status.
 - 1) Verify defined/connected ports match local MPI documentation spreadsheet.
 - 2) Open work order to correct any differences between the switches and the documentation spreadsheet.
4. Back up MPI switch configuration to MPIW.
 - a. Start tftp server on MPIW.

| | | | | | | | | | | | | | | | |
|---|--|-----------------|---|-------------------|---|---|--|--------------------------------|--|------------|---|---------------------|---|---|------|
| U.S. Postal Service Maintenance Checklist | | IDENTIFICATION | | | | | | | | | | | | | |
| | | WORK CODE | | EQUIPMENT ACRONYM | | | | | | CLASS CODE | | NUMBER | | | TYPE |
| | | 0 | 3 | L | A | N | | | | | A | A | 0 | 0 | 3 |
| Equipment Nomenclature MPI Cabinet | | Equipment Model | | | | | | Bulletin Filename mm13016aa | | | | Frequency 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) | Weeks |

b. Copy startup config to MPIW.

CLEAN UP

6. **Clean up.** Ensure all tools, lubricants, rags, etc., are removed from the work area. Report all deficiencies to your supervisor.

3 All