MAINTENANCE TECHNICAL SUPPORT CENTER HEADQUARTERS MAINTENANCE OPERATIONS UNITED STATES POSTAL SERVICE

Maintenance Management Order POSTAL SERVICETM

SUBJECT: Operational & Operational & Preventive

Maintenance Guidelines for the Robotic

Containerization System (RCS II)

TO: All RCS II Sites

DATE: June 2, 2015

NO: MMO-061-15

FILE CODE: TM4

dpen: mm14124ad

This Maintenance Management Order (MMO) provides Operational & Preventive Maintenance (PM) Guidelines for the Robotic Containerization System (RCS II). **This MMO supersedes MMO-007-08.** This bulletin applies to acronym RCS II and Class Code AB.

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

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

The attached master checklists provides tasks to be performed at periodic intervals (Daily, Weekly, Monthly, Semi-Annual, and Operational Maintenance), time required per task, and the minimum skill level for each task.

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.

Web Access: http://mtsc.usps.gov/pdf

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 Electrical Work Plan (EWP) Personal Protective Equipment (PPE). Refer to the current EWP MMO for appropriate EWP PPE and barricade 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.

Direct any questions or comments concerning this bulletin to the MTSC HelpDesk, online at MTSC>HELPDESK>Create/Update Tickets or call (800) 366-4123.

Andy L. Henderson

Manager (A)

Maintenance Technical Support Center

HQ Maintenance Operations

- 1. Summary, Workload Estimate for Robotic Containerization System II
- 2. RCS Master Checklist: 03-RCS-AB-001-M: Daily
- 3. RCS Master Checklist: 03-RCS-AB-002-M: Weekly
- 4. RCS Master Checklist: 03-RCS-AB-003-M: Monthly
- 5. RCS Master Checklist: 03-RCS-AB-004-M: Quarterly
- 6. RCS Master Checklist: 03-RCS-AB-005-M: Annual
- 7. RCS Master Checklist: 03-RCS-AB-006-M: Two Year
- 8. RCS Master Checklist: 03-RCS-AB-007-M: Three Year
- 9. RCS Master Checklist: 09-RCS-AB-001-M: Operational

SUMMARY

WORKLOAD ESTIMATE

FOR

ROBOTIC CONTAINERIZATION SYSTEM II

SUMMARY WORKLOAD ESTIMATE FOR RCS II

| Days of Operation | Routine Servicing (Hrs/Yr) | Repair* (Hrs/Yr) | Total Servicing & Repair Time | Non- Productive Time ** | Total Servicing Per Machine | Operation + Total S | nal Mainte ervicing | enance |
|----------------------|----------------------------------|---------------------|-------------------------------------|-------------------------------|-----------------------------------|---------------------|------------------------|--------|
| | | | (Hrs/Yr) | (Hrs/Yr) | (Hrs/Yr) | 1 | 2 | 3 |
| | | | | | | Tour | Tours | Tours |
| 5 Day | 339.39 | 67.88 | 407.27 | 40.73 | 447.99 | 556.33 | 664.66 | |
| 6 Day | 396.59 | 79.32 | 475.91 | 47.59 | 523.50 | 653.50 | 783.50 | |
| 7 Day | 453.79 | 90.76 | 544.55 | 54.45 | 599.00 | 750.67 | 902.34 | |

NOTES

*Repair estimates based on 20% of servicing.

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

| ITEM | TASK TIME | MULTIPLIER FACTOR | TOTAL MINUTES |
|------|--------------|----------------------|------------------|
| 1 | 1 | 1 | 1 |
| 2 | 1 | 1 | 1 |
| 3 | 1 | 3 | 3 |
| 4 | 1 | 3 | 3 |
| 5 | 1 | 3 | 3 |
| 6 | 1 | 3 | 3 |
| 7 | 2 | 3 | 6 |
| 8 | 5 | 1 | 5 |
| | | | 25 |

| CHECKLIST | TOTAL MINUTES |
|-------------|------------------|
| Daily | 66 |
| Weekly | 35 |
| Monthly | 65 |
| Quarterly | 75 |
| Annual | 86 |
| Two Years | 321 |
| Three Years | 171 |

RCS MASTER CHECKLIST

03-RCS-AB-001-M

DAILY

Time Total: 66 Minutes

Refer to MS-192 if additional maintenance information is required.

| U.S. Postal Service | IDENTIFICATION | | | | | | | | | | | | | | | |
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| Maintenance Checklist | CO | CODE | | ACRONYM CODE | | | | | | | | | | | | |
| | 0 | 3 | R | С | S | | | | | | Α | В | 0 | 0 | 1 | M |
| Equipment Nomenclature | Equipment Model | | | | | | | Βι | ılletin | Filer | name | | Frequency | | | |
| Robotic Containerization System | | RCS II MM14124AD | | | | | | | DAILY | | | | | | | |

| | | eystem Room William | 127/1 | | | | |
|---------------------|------|---|----------------------|--------------|--------------|------------------------|-------|
| Part or | Item | Task Statement and Instruction | Est. | Min. | | Threshold | S |
| Component | No | (Comply with all current safety precautions) | Time Req (min) | Skill Lev | 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. | | 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. WARNING FOR EWP/PPE: Steps contained in this bulletin may require the use of Electrical Work Plan (EWP) Personal Protective Equipment (PPE). Refer to the current EWP MMO for appropriate EWP PPE and barricade requirements. | | | | | |
| | | WARNING Ensure no one is standing in the safeguarded space around the robot and the motion settings for jogging are correctly set. Carelessness can result in personal injury or damage to the equipment. | | | | | |
| | | WARNING Be cautious when working around or on equipment when power has been applied. | | | | | |

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| Maintenance Checklist | CC | DE | | | | ACRO | MYNC | | | | CODE | | | | | |
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| Equipment Nomenclature | Equipment Model | | | | | | | В | ulletir | Filer | name | | Frequency | | | |
| Robotic Containerization System | | | | RCS | i II | RCS II MM14124AD DAIL | | | | | | | | D | AILY | • |

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|--------------------|------|---|----------------------|--------------|--------------|------------------------|-------|
| Part or | Item | Task Statement and Instruction | Est. | Min. | | Threshold | S |
| Component | No | (Comply with all current safety precautions) | Time Req (min) | Skill Lev | Run Hours | Pieces Fed (000) | Weeks |
| SYSTEM | 2. | Check the maintenance and failure log reports. | 3 | 10 | | | |
| | | Generate the reports from the Reports screen on the Human Machine Interface (HMI). | | | | | |
| | | Look for alarms and faults indicating problems with the machine operation. | | | | | |
| SYSTEM | 3. | Check warning horns and lights for proper operation. Check warning horns and lights using the HMI lamp test. | 3 | 9 | | | |
| ROBOT | 4. | Check the calibration of Robot 1. Check the calibration of Robot 1 by running the Calibration 840 Routine per instructions in MS-192, Volume B, Section 4. | 5 | 9 | | | |
| GRIPPER | 5. | Jog Robot 1 gripper to an inspection position. Jog Robot 1 gripper to an inspection position per instructions in MS-192, Volume B, Section 4. | 1 | 9 | | | |
| | 6. | Check Robot 1 gripper for proper operation. Check Robot 1 gripper for proper operation using the Griptest Routine per instructions in MS-192, Volume B, Section 4. | | 9 | | | |
| ROBOT | 7. | Check the calibration of Robot 2. Check the calibration of Robot 2 by running the Calibration 840 Routine per instructions in MS-192, Volume B, Section 4. | 5 | 9 | | | |
| GRIPPER | 8. | Jog Robot 2 gripper to an inspection position. Jog Robot 2 gripper to an inspection position per instructions in MS-192, Volume B, Section 4. | 1 | 9 | | | |
| | 9. | Check Robot 2 gripper for proper operation. Check Robot 2 gripper for proper operation using the Griptest Routine per instructions in MS-192, Volume B, Section 4. | 2 | 9 | | | |
| PNEUMATIC | 10. | Check main pneumatic panel air pressure. | 1 | 7 | | | |
| SYSTEM | | Check main pneumatic panel air pressure gauge for 75-80 PSI. | | | | | |
| | | 2. Report any deficiencies to supervisor. | | | | | |
| | 11. | Check Robot 1 main conveyor air pressure. | 1 | 7 | | | |
| | | Check Robot 1 main conveyor air pressure gauge for 60 ± 3 PSI. | | | | | |
| | | 2. Report any deficiencies to supervisor. | | | | | |

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| Maintenance Checklist | WC CO | RK DE | | | _ | | MENT MYM | | | | _ | ASS DE | NUMBER | | | TYPE |
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| Equipment Nomenclature | Equipment Model | | | | | | | В | Bulletin | | Frequency | | | | | |
| Robotic Containerization System | | | | | | | | | | D | AILY | • | | | | |

| Part or Component | Item No | Task Statement and Instruction (Comply with all current safety precautions) | Est. Time | Min. Skill | | Threshold | S |
|----------------------|------------|---|--------------|---------------|--------------|------------------------|-------|
| Component | 140 | (Comply with all current salety precautions) | Req (min) | Lev | Run Hours | Pieces Fed (000) | Weeks |
| | | | | | | | |
| PNUEMATIC | 12. | Check Robot 1 gripper air pressure | 1 | 7 | | | |
| SYSTEM | | 1. Check both gripper air gauges for 35 ± 2 PSI. | | | | | |
| | | 2. Report any deficiencies to supervisor. | | | | | |
| PNEUMATIC | 13. | Check Robot 2 main conveyor air pressure. | 1 | 7 | | | |
| SYSTEM | | Check Robot 2 main conveyor air pressure gauge for 60 ± 3 PSI. | | | | | |
| | | 2. Report any deficiencies to supervisor. | | | | | |
| PNUEMATIC | 14. | Check Robot 2 gripper air pressure | 1 | 7 | | | |
| SYSTEM | | 1. Check both gripper air gauges for 35 ± 2 PSI. | | | | | |
| | | 2. Report any deficiencies to supervisor. | | | | | |
| SYSTEM | 15. | Power down and lock out power. Power down the machine and lock out its electrical power sources as prescribed by the current local lockout/restore procedures. | | 9 | | | |
| GRIPPER | 16. | Robot 1 gripper cleaning and check. | 4 | 7 | | | |
| | | Clean mail containment plate guide shafts using a clean lint free cloth. Do not lubricate shafts. | | | | | |
| | | Check for smooth operation of the mail containment plate by manually raising and lowering the plate. | | | | | |
| | | Check gripper fingers for visible physical damage. | | | | | |
| | | Check shelf lowering spring plunger for visible physical damage. | | | | | |
| | | Check shelf lowering fingers for visible physical damage. | | | | | |
| | | Check removable harness assembly for visible physical damage. | | | | | |
| CONVEYOR | 17. | Check Robot 1 right angle transfer belts. | 2 | 7 | | | |
| | | Check both Robot 1 right angle transfers for visibly cracked, torn, or missing belts. | | | | | |
| | | 2. Report any deficiencies to supervisor. | | | | | |
| | | | | | | | |

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| Maintenance Checklist | WORK CODE | | | | _ | | MENT NYM | • | | | _ | ASS DE | NUMBER | | | TYPE |
| manitorianos oncomist | | DE | | | , | HURC | ואוזאוע | | | | | שטי | | | | |
| | 0 | 3 | R | С | S | | | | | | Α | В | 0 | 0 | 1 | М |
| Equipment Nomenclature | Equipment Model | | | | | | | В | ulletin | Filer | name | I | Frequency | | | |
| Robotic Containerization System | | RCS II MM14124AD DAILY | | | | | | | | | • | | | | | |

| Part or | Item | Task Statement and Instruction | Est. | Min. | | Threshold | s |
|--------------|------|---|----------------------|--------------|--------------|------------------------|-------|
| Component | No | (Comply with all current safety precautions) | Time Req (min) | Skill Lev | Run Hours | Pieces Fed (000) | Weeks |
| GRIPPER | 18. | Robot 2 gripper cleaning and check. | 4 | 7 | 1 | | |
| | | Clean mail containment plate guide shafts using a clean lint free cloth. Do not lubricate shafts. | | | | | |
| | | Check for smooth operation of the mail containment plate by manually raising and lowering the plate. | | | | | |
| | | 3. Check gripper fingers for visible physical damage. | | | | | |
| | | 4. Check shelf lowering spring plunger for visible physical damage. | | | | | |
| | | Check shelf lowering fingers for visible physical damage. | | | | | |
| | | Check removable harness assembly for visible physical damage. | | | | | |
| CONVEYOR | 19. | Check Robot 2 right angle transfer belts. | 2 | 7 | | | |
| | | Check both Robot 2 right angle transfers for visibly cracked, torn, or missing belts. | | | | | |
| | | 2. Report any deficiencies to supervisor. | | | | | |
| MAIL SEARCH | 20. | Perform a mail search. Search for mail pieces in and under machine. | 6 | 7 | | | |
| CLEAN UP | 21. | Clean up. Ensure all tools, lubricants, rags, etc., are removed from the work area. Report all deficiencies to supervisor. | | All | | | |
| | | WARNING | | | | | |
| | | Be cautious when working around or on equipment when power has been applied. | | | | | |
| SYSTEM POWER | 22. | Restore power. Remove lockouts, restore power, and return machine to operational status as prescribed by the current local lockout instructions providing lockout/restore procedures. | | 9 | | | |

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| Robotic Containerization System | RCS II MM14124AD DAILY | | | | | | AILY | • | | | | | | | | |

| Part or Component | Item No | Task Statement and Instruction (Comply with all current safety precautions) | Est. Time | Min. Skill | | Threshold | s |
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RCS MASTER CHECKLIST

03-RCS-AB-002-M

WEEKLY

Time Total: 35 Minutes

Refer to MS-192 if additional maintenance information is required.

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| Maintenance Checklist | CO | RK DE | | | | MEN [*] | | | | | ASS DE | Ν | UMBI | ĒR | TYPE |
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| Equipment Nomenclature | ipmer | | | | | E | Bulletir | | | | Freque | , | | | |
| Robotic Containerization System | | | | RCS | S II | | | M | M14 | 124AD |) | | WE | EKL | Y |

| Part or | Item | Task Statement and Instruction | Est. | Min. | | Threshold | s |
|---------------------|------|--|----------------------|--------------|--------------|------------------------|-------|
| Component | No | (Comply with all current safety precautions) | Time Req (min) | Skill Lev | 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. 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. WARNING FOR EWP/PPE: Steps contained in this bulletin may require the use of Electrical Work Plan (EWP) | | All | | | |
| | | Personal Protective Equipment (PPE). Refer to the current EWP MMO for appropriate EWP PPE and barricade requirements. WARNING Be cautious when working around or on equipment when power has been | | | | | |
| SYSTEM | 2. | applied. Power down and lock out power. Power down the machine and lock out its electrical and pneumatic power sources as prescribed by the current local lockout/restore procedures. | | 9 | | | |
| CAMERA | 3. | Infeed and robot cameras. Clean infeed and robot windows with a clean lint-free cloth. | 6 | 7 | | | |
| CONVEYOR | 4. | Clean SMM tray storage stand photo eyes. Clean SMM tray storage stand photo eyes with a clean lint-free cloth. | 8 | 7 | | | |

| U.S. Postal Service | | | | | | | | IDE | NTIFI | CAT | ION | | | | | |
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| Equipment Nomenclature | Equ | Equipment Model | | | | | | | ulletin | Filer | name | F | reque | ency | | |
| Robotic Containerization System | System RCS II | | | | | | | | MN | И14 ⁻ | 124AD | | | WE | EKL | Υ |

| Part or Component | Item No | Task Statement and Instruction (Comply with all current safety precautions) | Est. Time | Min. Skill | | Threshold | S |
|----------------------|------------|---|--------------|---------------|--------------|------------------------|-------|
| Сотронен | NO | (Comply with all current safety precautions) | Req (min) | Lev | Run Hours | Pieces Fed (000) | Weeks |
| CLEAN UP | 5. | Clean up. Ensure all tools, lubricants, rags, etc., are removed from the work area. Report all deficiencies to supervisor. | | All | | | |
| | | WARNING Be cautious when working around or on equipment when power has been applied. | | | | | |
| SYSTEM | 6. | Restore power. Remove lockouts, restore power, and return machine to operational status as prescribed by the current local lockout instructions providing lockout/restore procedures. | | 9 | | | |

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| Maintenance Checklist | _ | RK DE | | | _ | QUIF ACRO | | - | | | | ASS DE | N | UMBI | ĒR | TYPE |
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| Equipment Nomenclature | Equ | Equipment Model | | | | | | | | Filer | name | F | reque | ency | • | |
| Robotic Containerization System | Robotic Containerization System RCS II | | | | | | | | MI | M14 | 124AD |) | | WE | EKL | Υ |

| Part or Component | Item No | Task Statement and Instruction (Comply with all current safety precautions) | Est. Time | Min. Skill | | Threshold | s |
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| Component | 110 | (Gomply wan an outlone dately productions) | Req (min) | Lev | Run Hours | Pieces Fed (000) | Weeks |

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RCS MASTER CHECKLIST

03-RCS-AB-003-M

MONTHLY

Time Total: 65 Minutes

Refer to MS-192 if additional maintenance information is required.

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| Maintenance Checklist | CO | DE | | | | ACR(| MYNC | | | | CC | DE | | | | |
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| Equipment Nomenclature | Equ | ipmer | nt Mo | del | | | | В | ulletir | Filer | name | | Freque | ency | | |
| Robotic Containerization System | | | | RCS | S II | | | | MI | M14 | 124AD |) | | 10M | NTHI | _Y |

| _ | | | | | l. | | |
|----------------------|------------|---|--------------|---------------|--------------|------------------------|-------|
| Part or Component | Item No | Task Statement and Instruction (Comply with all current safety precautions) | Est. Time | Min. Skill | | Threshold | ls |
| Component | INO | (Comply with all current safety precautions) | Req (min) | Lev | 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. | | 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 lintered 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. WARNING FOR EWP/PPE: Steps contained in this bulletin may require the use of Electrical Work Plan (EWP) Personal Protective Equipment (PPE). Refer to the current EWP MMO for appropriate EWP PPE and barricade requirements. | | | | | |
| | | WARNING Be cautious when working around or on equipment when power has been applied. | | | | | |
| SYSTEM | 2. | Operate all emergency stops and emergency stop pull cords to check for proper operation. Verify correct operation of emergency stops and emergency pull cords by: | 8 | 7 | | | |
| | | Ensuring machine stops when the emergency stop is pressed or the emergency stop pul cord is pulled. | | | | | |
| | | Observing emergency stop indicator lamp or the emergency stop switch illuminates when the emergency stop is pressed or emergency stop pull cord is pulled. | ı | | | | |
| | | 3. Observing emergency stop indicator on the | | | | | |

| <u> </u> | | | | | | | | | | | | | | | | |
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| Maintenance Checklist | CC | DE | | | | ACRO | MYNC | | | | CO | DE | | | | |
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| Equipment Nomenclature | Equ | quipment Model | | | | | | | ulletir | File | name | | Freque | ency | | |
| Robotic Containerization System | | RCS II | | | | | | | MI | M14 | 124AD |) | | 10M | NTH | _Y |

| Part or | Item | Task Statement and Instruction | Est. | Min. | | Threshold | s |
|-----------|------|--|----------------------|--------------|--------------|------------------------|-------|
| Component | No | (Comply with all current safety precautions) | Time Req (min) | Skill Lev | Run Hours | Pieces Fed (000) | Weeks |
| | | Human Machine Interface (HMI) Main screen graphic display. A red indicator will appear at the location of emergency stop or pull cord as represented on HMI Main screen graphic display when emergency stop is pressed or emergency stop pull cord is pulled. | | | | | |
| | | 4. Report any deficiencies to supervisor. | | | | | |
| | 3. | Operate the Lexan door safety interlocks. Verify correct operation of the Lexan door safety interlocks by: | 4 | 7 | | | |
| | | Observing Lexan door interlock indicator on the HMI Main screen graphic display. A red indicator box will appear at the location of the Lexan safety door as represented on the HMI Main screen graphic display when the Lexan door safety interlock is operated by opening the Lexan safety door. | | | | | |
| | | 2. Report any deficiencies to supervisor. | | | | | |
| CONVEYOR | 4. | Check the conveyor drive rollers for proper speed setting. Check conveyor drive rollers for proper speed setting per instructions in MS-192, Volume B, Section 4. | 12 | 9 | | | |
| SYSTEM | 5. | Power down and lock out power. Power down the machine and lock out its electrical and pneumatic power sources as prescribed by the current local lockout/restore procedures. | 15 | 9 | | | |
| CONVEYOR | 6. | Clean conveyor photo eyes. Clean all main conveyor photo eye sensors and reflectors with a clean lint-free cloth. | 8 | 7 | | | |
| | 7. | Check all main conveyor system roller drive belts. | 12 | 7 | | | |
| | | Observe if any belts are damaged or missing. | | | | | |
| | | 2. Report any deficiencies to supervisor. | | | | | |
| CLEAN UP | 8. | Clean up. Ensure all tools, lubricants, rags, etc., are removed from the work area. Report all deficiencies to supervisor. | 2 | All | | | |

| U.S. Postal Service | | | | | | | | IDE | NTIF | ICATI | ON | | | | | |
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| Maintenance Checklist | _ | RK | | | _ | | MEN | - | | | | ASS | Ν | UMBI | ĒR | TYPE |
| Maintenance Checklist | CO | DE | | | | ACRO | NYN | 1 | | | CO | DE | | | | |
| | 0 | 3 | R | С | S | | | | | | Α | В | 0 | 0 | 3 | М |
| Equipment Nomenclature | Equ | ipmer | nt Mo | del | | | | E | Bulletir | Filer | name | | Freque | ency | | |
| Robotic Containerization System | | | | RCS | S II | | | | MI | M141 | 124AD |) | | 10M | NTHI | _Y |

| Part or | Item No | Task Statement and Instruction (Comply with all current safety precautions) | Est. Time | Min. Skill | | Threshold | ls |
|-----------|------------|--|--------------|---------------|--------------|------------------------|-------|
| Component | NO | (Comply with all current safety precautions) | Req (min) | Lev | Run Hours | Pieces Fed (000) | Weeks |
| | | WARNING Be cautious when working around or on equipment when power has been applied. | | | | | |
| SYSTEM | 9. | Restore power. Remove lockouts, restore power, and return machine to operational status as prescribed by the current local lockout instructions providing lockout/restore procedures. | | 9 | | | |

RCS MASTER CHECKLIST

03-RCS-AB-004-M

QUARTERLY

Time Total: 75 Minutes

Refer to MS-192 if additional maintenance information is required.

| U.S. Postal Service | | | | | | | | ID | ENTIF | ICAT | ION | | | | | |
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| Maintenance Checklist | WC | RK DE | | | _ | | MEN. | - | | | | ASS DE | N | UMBI | ĒR | TYPE |
| | 0 | 3 | R | С | S | | | | | | A | В | 0 | 0 | 4 | М |
| Equipment Nomenclature | Equipment Model | | | | | | | E | Bulletir | File | name | ı | reque | ency | | |
| Robotic Containerization System | RCS II | | | | | MI | M14 | 124AD |) | C | (UAF | RTE | RLY | | | |

| Part or | Item | Task Statement and Instruction | Est. | Min. | | Threshold | S |
|---------------------|------|---|----------------------|-----------|--------------|------------------------|-------|
| Component | No | (Comply with all current safety precautions) | Time Req (min) | Skill Lev | 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. 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 | | All | | | |
| | | 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. WARNING FOR EWP/PPE: Steps contained in this bulletin may require the use of Electrical Work Plan (EWP) Personal Protective Equipment (PPE). Refer to the current EWP MMO for appropriate EWP PPE and barricade requirements. | | | | | |
| | | WARNING Be cautious when working around or on equipment when power has been applied. | | | | | |
| SYSTEM CONSOLE | 2. | Check uninterruptible power supply. Check uninterruptible power supply by verifying the Battery OK green LED is lit. | 1 | 7 | | | |
| | 3. | Check system console cabinet fans. Check system console cabinet fans for proper operation by testing for airflow. Test airflow by feeling for air movement. | | 9 | | | |
| CONVEYOR | 4. | Check MCP 1 fans for proper operation. Check MCP 1 fans for proper operation by testing for airflow. Test airflow by feeling for air movement. | | 9 | | | |

| U.S. Postal Service | | | | | | | | IDE | NTIF | ICATI | ION | | | | | |
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| Maintenance Checklist | WC | RK DE | | | _ | | MENT NYM | | | | CLA | ASS DE | N | UMBE | R | TYPE |
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| Equipment Nomenclature Robotic Containerization System | Equipment Model RCS II | | | | | | | В | ulletir Mi | | name 124AD | | reque | ency UAF | RTE | |

| | | System Ree ii wiwi 4 | | | | 37 (I C I E I | |
|----------------------|------------|--|--------------|---------------|--------------|------------------------|-------|
| Part or Component | Item No | Task Statement and Instruction (Comply with all current safety precautions) | Est. Time | Min. Skill | | Threshold | S |
| Component | INU | (Comply with an current safety precautions) | Req (min) | Lev | Run Hours | Pieces Fed (000) | Weeks |
| ROBOT | 5. | Check Robot 1 S4C Robot Controller fans for proper operation. Check Robot 1 S4C Robot Controller fans for proper operation by testing for airflow. Test airflow by feeling for air movement. | 1 | 9 | | | |
| CONVEYOR | 6. | Check MCP 2 fans for proper operation. Check MCP 2 fans for proper operation by testing for airflow. Test airflow by feeling for air movement. | | 9 | | | |
| ROBOT | 7. | Check Robot 2 S4C Robot Controller fans for proper operation. Check Robot 2 S4C Robot Controller fans for proper operation by testing for airflow. Test airflow by feeling for air movement. | | 9 | | | |
| PNEUMATIC SYSTEM | 8. | Conduct ultrasonic scan of pneumatic system. Conduct ultrasonic scan of pneumatic system to identify any air leaks. | | 9 | | | |
| SYSTEM | 9. | Power down and lockout power. Power down the machine and lock out its electrical power source as prescribed by the current local lockout/restore procedures. | | 9 | | | |
| SYSTEM CONSOLE | 10. | Clean system console cabinet air filters. Clean by vacuuming system console cabinet air filters. | 2 | 7 | | | |
| CONVEYOR | 11. | Clean MCP 1 air filters. Clean by vacuuming MCP 1 air filters. | 2 | 7 | | | |
| ROBOT | 12. | Clean Robot 1 S4C Robot Controller air filters. Clean by vacuuming Robot 1 S4C Robot Controller air filters. | | 7 | | | |
| CONVEYOR | 13. | Clean MCP 2 air filters. Clean by vacuuming MCP 2 air filters. | 2 | 7 | | | |
| ROBOT | 14. | Clean Robot 2 S4C Robot Controller air filters. Clean by vacuuming Robot 2 S4C Robot Controller air filters. | | 7 | | | |
| ROBOT | 15. | Verify MEMOLUB automatic lubricators are operating. Verify the MEMOLUB automatic lubricators are operating by using the indicator labels to confirm the level of grease has changed since the last reading. | | 7 | | | |
| CONVEYOR | 16. | Lubricate the right angle transfer linear guide bearings. Lubricate the right angle transfer linear guide bearings at all four transfer stations. Apply two strokes (3 gm) of Klüber Microlube GL261 at each of the four (4) grease manifold fittings. | | 7 | | | |

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| U.S. Postal Service | | | | | | | | IDE | NTIF | ICAT | ION | | | | | |
| Maintenance Checklist | _ | RK | | | | | MEN | | | | | ASS | N | UMB | ΞR | TYPE |
| | CC | DE | | | | ACRO | MYM | | | | CO | DE | | | | |
| | 0 | 3 | R | С | S | | | | | | Α | В | 0 | 0 | 4 | М |
| Equipment Nomenclature | Equipment Model | | | | | | | В | ulletin | Filer | name | F | reque | ency | | |
| Robotic Containerization System | RCS II | | | | | | M | M14 | 124AD |) | C | UAF | RTE | RLY | | |

| Part or | Item No | Task Statement and Instruction | Est. Time | Min. Skill | | Threshold | s |
|-----------|------------|---|--------------|---------------|--------------|------------------------|-------|
| Component | INO | (Comply with all current safety precautions) | Req (min) | Lev | Run Hours | Pieces Fed (000) | Weeks |
| | 17. | Lubricate the tray tub lift linear guide bearings. Lubricate the tray tub lift linear guide bearings at both lift stations. Apply 1 ml of ISO VG 10 to 20 weight oil at each of the two (2) oil fittings. | | 7 | | | |
| CLEAN UP | 18. | Clean up. Ensure all tools, lubricants, rags, etc., are removed from the work area. Report all deficiencies to supervisor. | | All | | | |
| | | WARNING Be cautious when working around or on equipment when power has been applied. | | | | | |
| SYSTEM | 19. | Restore power. Remove lockouts, restore power, and return machine to operational status as prescribed by the current local lockout instructions providing lockout/restore procedures. | | 9 | | | |

ATTACHMENT 6 RCS MASTER CHECKLIST

03-RCS-AB-005-M

ANNUAL

Time Total: 86 Minutes

Refer to MS-192 if additional maintenance information is required.

| U.S. Postal Service | | | | | | | | IDE | NTIF | ICAT | ION | | | | | |
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| Matatanana Objection | WC |)RK | | | Е | QUIF | MEN | Γ | | | CLA | ASS | N | UMB | ĒR | TYPE |
| Maintenance Checklist | CO | DE | | | | ACR(| MYNC | | | | CC | DE | | | | |
| | 0 | 3 | R | С | S | | | | | | Α | В | 0 | 0 | 5 | M |
| Equipment Nomenclature | Equ | ipmer | nt Mo | del | | | | В | ulletir | Filer | name | | Freque | ency | | |
| Robotic Containerization System | | | RCS | S II | | | | MI | M14 | 124AD |) | | AN | NUA | L | |

| Part or | Item | Task Statement and Instruction | Est. | Min. | | Threshold | s |
|---------------------|------|--|----------------------|-----------|--------------|------------------------|-------|
| Component | No | (Comply with all current safety precautions) | Time Req (min) | Skill Lev | 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. THE USE OF COMPRESSED OR BLOWN AIR IS PROHIBITED. When cleaning is required, an alternative | | All | | | |
| | | 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. WARNING FOR EWP/PPE: Steps contained in this bulletin may require the use of Electrical Work Plan (EWP) Personal Protective Equipment (PPE). Refer to the current EWP MMO for appropriate EWP PPE and barricade requirements. | | | | | |
| | | Ensure no one is standing in the safeguarded space around the robot and that the motion settings for jogging are correctly set. Carelessness can result in personal injury or damage to the equipment. | | | | | |
| | | WARNING Be cautious when working around or on equipment when power has been applied. | | | | | |
| SYSTEM | 2. | Conduct thermal scan of the power distribution panel. 1. Don PPE as required by current EWP MMO. | 14 | 9 | | | |

| U.S. Postal Service | | | | | | | | IDE | NTIF | ICATI | ON | | | | | |
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| Maintenance Checklist | WC | | | | | | MEN | | | | _ | ASS | N | UMBE | R | TYPE |
| Maintenance Checklist | CO | DE | | | | <u>ACRC</u> | MYNC | | | | CO | DE | | | | |
| | 0 | 3 | R | С | S | | | | | | Α | В | 0 | 0 | 5 | М |
| Equipment Nomenclature | Equ | ipmer | nt Mo | del | | | | В | ulletir | Filer | name | F | reque | ency | | |
| Robotic Containerization System | RCS II | | | | | | | MI | M14′ | 124AD |) | | ΑN | NUA | L | |

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| Part or Component | Item No | Task Statement and Instruction (Comply with all current safety precautions) | Est. Time | Min. Skill | | Threshold | |
| , | | | Req (min) | Lev | Run Hours | Pieces Fed (000) | Weeks |
| | | 2. Power down the machine. | | 1 | | | |
| | | 3. Open the power distribution panel. | | | | | |
| | | Restore power and return machine to operational status. | | | | | |
| | | 5. Scan the interior of the power distribution panel using a thermal imaging camera. | | | | | |
| | | 6. Look for anomalies indicating a high resistance connection or other problem. | | | | | |
| | | 7. Close power distribution panel. | | | | | |
| SYSTEM | 3. | Power Down And Lockout Power. Power down the machine and lockout its power as prescribed by the current local lockout instructions providing lockout/restore procedures. | 14 | 9 | | | |
| ROBOT | 4. | Check Robot 1 axis 1 belts. | 10 | 9 | | | |
| | | Check for dirt and grease buildup. | | | | | |
| | | 2. Check for wear or damage. | | | | | |
| | | 3. Check for proper alignment and tracking. | | | | | |
| | 5. | Check Robot 1 axis 2 belts. | 4 | 9 | | | |
| | | Check for dirt and grease buildup. | | | | | |
| | | 2. Check for wear or damage. | | | | | |
| | | 3. Check for proper alignment and tracking. | | | | | |
| | 6. | Check Robot 1 axis 3 belts. | 4 | 9 | | | |
| | | Check for dirt and grease buildup. | | | | | |
| | | 2. Check for wear or damage. | | | | | |
| | | 3. Check for proper alignment and tracking. | | | | | |
| | 7. | Check Robot 2 axis 1 belts. | 10 | 9 | | | |
| | | Check for dirt and grease buildup. | | | | | |
| | | 2. Check for wear or damage. | | | | | |
| | | 3. Check for proper alignment and tracking. | | | | | |
| | 8. | Check Robot 2 axis 2 belts. | 4 | 9 | | | |
| | | Check for dirt and grease buildup. | | | | | |

| U.S. Postal Service | | | | | | | | IDEN | NTIF | ICATI | ON | | | | | |
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| Maintenance Checklist | CO | DE | | | | 4CRC | MYM | | | | CO | DE | | | | |
| | 0 | 3 | R | С | S | | | | | | Α | В | 0 | 0 | 5 | M |
| Equipment Nomenclature | Equ | ipmer | nt Mo | del | | | | Βu | ılletin | Filer | name | | Freque | ency | | |
| Robotic Containerization System | | | | RCS | i II | | | | M | M141 | 124AD |) | | ANI | NUA | L |

| Part or | Item | Task Statement and Instruction | Est. | Min. | | Threshold | S |
|-----------|------|---|----------------------|--------------|--------------|------------------------|-------|
| Component | No | (Comply with all current safety precautions) | Time Req (min) | Skill Lev | Run Hours | Pieces Fed (000) | Weeks |
| | | 2. Check for wear or damage. | | | | | |
| | | 3. Check for proper alignment and tracking. | | | | | |
| | 9. | Check Robot 2 axis 3 belts. | 4 | 9 | | | |
| | | Check for dirt and grease buildup. | | | | | |
| | | 2. Check for wear or damage. | | | | | |
| | | 3. Check for proper alignment and tracking. | | | | | |
| | | WARNING | | | | | |
| | | Discard solvent soaked materials according to local procedures to prevent spontaneous combustion. | | | | | |
| ROBOT | 10. | Check Robot 1, axis 1, gearbox for proper oil level. | 4 | 7 | | | |
| | | Clean immediate area around the axis 1 gearbox oil level plug. | | | | | |
| | | Loosen and remove axis 1 gearbox oil level plug. | | | | | |
| | | Ensure the oil is at the level of the plug opening threads. | | | | | |
| | | Fill as needed with Shell Tivela S-220 or Klüber GH 6-220 lubricant. | | | | | |
| | | 5. Replace plug and tighten securely. | | | | | |
| | | 6. Clean up any spilled oil. | | | | | |
| | 11. | Check Robot 1, axis 2, gearbox for proper oil level. | 4 | 7 | | | |
| | | Clean immediate area around the axis 2 gearbox oil level plug. | | | | | |
| | | Loosen and remove axis 2 gearbox oil level plug. | | | | | |
| | | 3. Ensure the oil is at the level of the plug opening threads. | | | | | |
| | | Fill as needed with Shell Tivela S-220 or Klüber GH 6-220 lubricant. | | | | | |
| | | 5. Replace plug and tighten securely. | | | | | |
| | | 6. Clean up any spilled oil. | | | | | |

| U.S. Postal Service | | | | | | | IDE | NTIF | ICAT | ION | | | | | |
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| Maintenance Checklist | CO | RK DE | | | | MENT NYM | | | | _ | ASS DE | N | UMBI | ΞR | TYPE |
| | 0 | 3 | R | С | S | | | | | Α | В | 0 | 0 | 5 | М |
| Equipment Nomenclature | Equ | ipmer | nt Mo | del | | | В | ulletir | Filer | name | F | reque | ency | | |
| Robotic Containerization System | | | | RCS | i II | | | MI | M14 | 124AD |) | | ΑN | NUA | L |

| Part or | Item | Task Statement and Instruction | Est. | Min. | | Thresholds | S |
|-----------|-------|--|-------------|-----------|-------|--------------|-------|
| Component | No | (Comply with all current safety precautions) | Time Req | Skill Lev | Run | Pieces | Weeks |
| | ! | | (min) | | Hours | Fed (000) | |
| | 12. | Check Robot 2, axis 1, gearbox for proper oil | 4 | 7 | | | |
| | 12. | level. | 4 | ' | | | |
| | | Clean immediate area around the axis 1 gearbox oil level plug. | | | | | |
| | | Loosen and remove axis 1 gearbox oil level plug. | | | | | |
| | | Ensure the oil is at the level of the plug opening threads. | | | | | |
| | | 4. Fill as needed with Shell Tivela S-220 or Klüber GH 6-220 lubricant. | | | | | |
| | | 5. Replace plug and tighten securely. | | | | | |
| | | 6. Clean up any spilled oil. | | | | | |
| | | WARNING | | | | | |
| | | Discard solvent soaked materials according to local procedures to prevent spontaneous combustion. | | | | | |
| | 13. | Check Robot 2, axis 2, gearbox for proper oil level. | 4 | 7 | | | |
| | | Clean immediate area around the axis 2 gearbox oil level plug. | | | | | |
| | | Loosen and remove axis 2 gearbox oil level plug. | | | | | |
| | | 3. Ensure the oil is at the level of the plug opening threads. | | | | | |
| | | 4. Fill as needed with Shell Tivela S-220 or Klüber GH 6-220 lubricant. | | | | | |
| l i | | 5. Replace plug and tighten securely. | | | | | |
| i | | 6. Clean up any spilled oil. | | | | | |
| CLEAN UP | 14. | Clean up. Ensure all tools, lubricants, rags, etc., are removed from the work area. Report all deficiencies to supervisor. | 2 | All | | | |
| | | WARNING | | | | | |
| | | Be cautious when working around or on equipment when power has been applied. | | | | | |

SYSTEM

Maintenance Technical Support Center

3

9

| U.S. Postal Service | | | | | | | IDEN | <u> </u> | CATI | ON | | | | | |
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| Materian and Object that | WORK | | | Е | QUIF | MEN | Γ | | | CL | ASS | N | JMBE | ₽R | TYPE |
| Maintenance Checklist | CODE | | | | ACRO | MYM | | | | C | ODE | | | | |
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| Equipment Nomenclature | Equipme | nt Mod | del | | | | Bu | lletin | Filer | name | | Freque | ncy | | |
| Robotic Containerization System | | | RCS | Ш | | | | ΜN | Л141 | 124AI | D | | ANI | NUA | L |
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| Part or Item | | Stater | | | | | | | | Est. | Min. | | Thre | shold | S |
| Component No | (Comply wi | th all c | curren | t safe | ety pr | ecauti | ons) | | | Time | Skill | Run | Dic | eces | Weeks |
| | | | | | | | | | | Req | Lev | Hours | | ed | vveeks |
| (min) Hours Fed | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

Restore power. Remove lockouts, restore

power, and return machine to operational status as prescribed by the current local lockout instructions providing lockout/restore

procedures.

RCS MASTER CHECKLIST

03-RCS-AB-006-M

TWO YEAR

Time Total: 321 Minutes

Refer to MS-192 if additional maintenance information is required.

| U.S. Postal Service | | | | | | | | IDENTII | FICATI | ION | | | | | |
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| Maintenance Checklist | CO | DE | | | | ACRO | MYM | | | CO | DE | | | | |
| | 0 | 3 | R | С | S | | | | | Α | В | 0 | 0 | 6 | М |
| Equipment Nomenclature | Equ | ipmer | nt Mo | del | | | | Bullet | in Filer | name | | Freque | ency | | |
| Robotic Containerization System | | | | RCS | i II | | | M | M14 | 124AD |) | - | TWC | YE, | ٩R |

| Part or | Item | Task Statement and Instruction | Est. | Min. | | Threshold | s |
|---------------------|------|--|----------------------|-----------|--------------|------------------------|-------|
| Component | No | (Comply with all current safety precautions) | Time Req (min) | Skill Lev | 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. THE USE OF COMPRESSED OR BLOWN AIR IS PROHIBITED. When cleaning is required, an alternative cleaning method such as a HEPA filtered. | | All | | | |
| | | 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. WARNING FOR EWP/PPE: Steps contained in this bulletin may require the use of Electrical Work Plan (EWP) Personal Protective Equipment (PPE). Refer to the current EWP MMO for appropriate EWP PPE and barricade requirements. | | | | | |
| | | Ensure no one is standing in the safeguarded space around the robot and that the motion settings for jogging are correctly set. Carelessness can result in personal injury or damage to the equipment. | | | | | |
| SYSTEM | 2. | Power down and lock out power. Power down the machine and lock out its electrical and pneumatic power sources as prescribed by the current local lockout/restore procedures. | | 9 | | | |
| | | WARNING Discard or dispose of chemical soaked materials according to MSDS and in accordance with local procedures. | | | | | |

| U.S. Postal Service | | | | | | | | IDE | NTIF | ICATI | ON | | | | | |
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| Maintenance Checklist | WC | RK DE | | | _ | | MENT NYM | • | | | CL/ CO | | N | UMBE | ER. | TYPE |
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| Equipment Nomenclature Robotic Containerization System | Equ | ipmer | | del RCS | i II | <u>I</u> | | В | ulletir MI | | name 124AD | | reque | ency FWC | YE. | AR |

| | | NOC II IVIIVITA | | | | VVO 1 L/ | |
|-----------|------|--|----------------------|--------------|--------------|------------------------|-------|
| Part or | Item | Task Statement and Instruction | Est. | Min. | | Threshold | S |
| Component | No | (Comply with all current safety precautions) | Time Req (min) | Skill Lev | Run Hours | Pieces Fed (000) | Weeks |
| ROBOT | 3. | Lubricate Robot 1, axis 3, 75mm belt upper roller bearing. Lubricate Robot 1, axis 3, 75mm belt upper roller bearing per instructions in Axis 3 Lube Point Maintenance placard or MS-192, Volume B, Section 3. Use Shell Albida LC2 grease. | | 9 | | | |
| | 4. | Lubricate Robot 1, axis 3, bearing blocks, and Front Lubrication Units (FLUs). Lubricate Robot 1, axis 3, bearing blocks, and FLUs per instructions in Axis 3 Lube Point Maintenance placard or MS-192, Volume B, Section 3. Use Mobile SHC639 oil and Optimal Longtime PD2 grease. | | 9 | | | |
| | 5. | Lubricate Robot 2, axis 3, 75mm belt upper roller bearing. Lubricate Robot 2, axis 3, 75mm belt upper roller bearing per instructions in Axis 3 Lube Point Maintenance placard or MS-192, Volume B, Section 3. Use Shell Albida LC2 grease. | | 9 | | | |
| | 6. | Lubricate Robot 2, axis 3, bearing blocks, and FLUs. Lubricate Robot 2, axis 3, bearing blocks, and FLUs per instructions in Axis 3 Lube Point Maintenance placard or MS-192, Volume B, Section 3. Use Mobile SHC639 oil and Optimal Longtime PD2 grease. | | 9 | | | |
| | 7. | Replace MEMOLUB automatic lubricator pouches and batteries. Replace MEMOLUB automatic lubricator pouches and batteries per instructions in MS-192, Volume B, Section 3. Use MEMOLUB Refill Kit, GIGA 480, NSN 4730-06-000-9841 (8 required for each RCS) and MEMOLUB Refill Kit, MEGA 240, NSN 4730-06-000-9842 (2 required for each RCS). | | 9 | | | |
| CLEAN UP | 8. | Clean up. Ensure all tools, lubricants, rags, etc., are removed from the work area. Report all deficiencies to supervisor. | | All | | | |
| | | WARNING Be cautious when working around or on equipment when power has been applied. | | | | | |

| U.S. Postal S | U.S. Postal Service | | | | | | | | | IDF | NTIFI | CAT | ION | | | | | |
|---|---------------------|---|---|------------|-----------|-------------|------------|------|-------------|--------------|---------------|------------|---------------|--------------|--------------|----|------------------------|-------|
| Maintenance (| | list | _ | DRK DDE | | | | | MENT NYM | | | 0, (1) | CL | ASS ODE | N | UM | 1BER | TYPE |
| | | | 0 | 3 | R | С | S | | | | | | Α | В | 0 | (| 0 6 | М |
| Equipment Nomenclature Robotic Containeria | | System | Equ | ipmer | | del RCS | i II | | <u>'</u> | В | ulletin MN | | name 124AI | D | Freque | | VO YE | ٩R |
| Part or | Item | , | | | | | | | | Est. Time | Min. | | Т | hreshold | s | | | |
| Component | No | (1 | Task Statement and Instruction (Comply with all current safety precautions) | | | | | | | | | | | Skill Lev | Run Hours | | Pieces Fed (000) | Weeks |
| SYSTEM | 9. | Restore power, a as pres instruction | and scrib | ed | n m by | achi the | ne t cu | o op | loc | ona al | lock | tus out | | 9 | | | | |

RCS MASTER CHECKLIST

03-RCS-AB-007-M

THREE YEAR

Time Total: 171 Minutes

Refer to MS-192 if additional maintenance information is required.

| U.S. Postal Service | | | | | | | IDE | NTIF | CATI | ON | | | | | |
|---------------------------------|----------|----------|-------|-----|------|-----------------|-----|---------|------------------|-------|-----------|-------|------|------|------|
| Maintenance Checklist | WC CO | RK DE | | | _ | MENT NYM | | | | _ | ASS DE | N | UMBE | ĒR | TYPE |
| | 0 | 3 | R | С | S | | | | | Α | В | 0 | 0 | 7 | М |
| Equipment Nomenclature | Equ | pmer | nt Mo | del | | | В | ulletin | Filer | name | F | reque | ency | | |
| Robotic Containerization System | | | | RCS | il 8 | | | M | И14 [′] | 124AD |) | T | HRE | E YI | EAR |

| STATEMENT Drest la did de el composition de el composition de el composition de la composition della | | | | | | 4 |
|--|--|----------------------|--------------|--------------|------------------------|-------|
| SAFETY STATEMENT 1. C D RESIDENT STATEMENT 1. | Task Statement and Instruction | Est. | Min. | | Threshold | |
| STATEMENT Drest in the second of the second | (Comply with all current safety precautions) | Time Req (min) | Skill Lev | Run Hours | Pieces Fed (000) | Weeks |
| SYSTEM 2. Pth pp cc cr PNUEMATIC SYSTEM 1. 2. | 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 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. WARNING FOR EWP/PPE: Steps contained in this bulletin may require the use of Electrical Work Plan (EWP) Personal Protective Equipment (PPE). Refer to the current EWP MMO for appropriate EWP PPE and barricade requirements. | | All | | (000) | |
| SYSTEM 1. | Power down and lock out power. Power down the machine and lock out its electrical and pneumatic power sources as prescribed by the current local lockout/restore procedures. | | 9 | | | |
| SYSTEM 1. | Replace coalescing filter. | 2 | 7 | | + | + |
| 4. | Turn filter holder clockwise to remove. Unscrew filter and remove. Screw new filter in place to secure it. Install filter holder. Turn counterclockwise to | _ | | | | |
| | lock in place. | | | | | |
| CONSOLE b | Replace uninterrupted power supply (UPS) battery. Replace UPS battery per instructions in MS-192, Volume B, Section 5. | | 9 | | | |

| U.S. Postal Service | | | | | | | | IDE | NTIF | ICAT | ION | | | | | |
|--|----|----------|---|------------|------|-----|-------------|-----|---------------|------|-----|-----------|--------|------|------|------|
| Maintenance Checklist | WC | RK DE | | | | | MENT NYM | | | | _ | ASS DE | N | UMBI | ER | TYPE |
| maintonarios circokiros | 0 | 3 | R | С | S | ACK | JIN T IVI | | | | A | B | 0 | 0 | 7 | М |
| Equipment Nomenclature Robotic Containerization System | | ipmer | | del RCS | S II | | I | В | ulletir MI | | | | Freque | , | E YI | EAR |

| Part or | Item | Task Statement and Instruction | Est. | Min. | | Threshold | s |
|-----------|------|--|----------------------|--------------|--------------|------------------------|-------|
| Component | No | (Comply with all current safety precautions) | Time Req (min) | Skill Lev | Run Hours | Pieces Fed (000) | Weeks |
| | 5. | Replace computer BIOS battery. Replace computer BIOS battery per instructions in MS-192, Volume B, Section 5. | | 10 | | | |
| ROBOT | 6. | Replace Robot 1 S4C batteries. Replace Robot 1 S4C batteries with cable per instructions in MS-192, Volume B, Section 5. | | 10 | | | |
| | 7. | Replace Robot 1 serial measurement board lithium battery pack. Replace Robot 1 serial measurement board lithium battery pack per instructions in MS-192, Volume B, Section 5. | | 10 | | | |
| | 8. | Replace Robot 2 S4C batteries . Replace Robot 2 S4C batteries with cable per instructions in MS-192, Volume B, Section 5. | | 10 | | | |
| | 9. | Replace Robot 2 serial measurement board lithium battery pack. Replace Robot 2 serial measurement board lithium battery pack per instructions in MS-192, Volume B, Section 5. | | 10 | | | |
| | | WARNING | | | | | |
| | | Discard or dispose of chemical soaked materials according to MSDS and in accordance with local procedures. | | | | | |
| | 10. | Change Robot 1, axis 1, gearbox oil. Change Robot 1, axis 1, gearbox oil per instructions in MMO-026-06 or MS-192, Volume B, Section 3. Use Shell Tivela S-220 or Klüber GH 6-220 lubricant. | | 9 | | | |
| | 11. | Change Robot 1, axis 2, gearbox oil. Change Robot 1, axis 2, gearbox oil per instructions in MMO-026-06 or MS-192, Volume B, Section 3. Use Shell Tivela S-220 or Klüber GH 6-220 lubricant. | | 9 | | | |
| | 12. | Change Robot 2, axis 1, gearbox oil. Change Robot 2, axis 1, gearbox oil per instructions in MMO-026-06 or MS-192, Volume B, Section 3. Use Shell Tivela S-220 or Klüber GH 6-220 lubricant. | | 9 | | | |
| | 13. | Change Robot 2, axis 2, gearbox oil. Change Robot 2, axis 2, gearbox oil per instructions in MMO-026-06 or MS-192, Volume B, Section 3. Use Shell Tivela S-220 or Klüber GH 6-220 lubricant. | | 9 | | | |

| U.S. Postal Service | IDENTIFICATION | | | | | | | | | | | | | | | |
|---------------------------------|-----------------|----------|---|---|---|-----------|-------------|-------------------|---|--|------------|---------------|---|--------|---|------|
| Maintenance Checklist | | RK DE | | | _ | | MENT NYM | • | _ | | | CLASS CODE | | NUMBER | | TYPE |
| | 0 | 3 | R | С | S | HONC | /IN I IVI | | | | A | В | 0 | 0 | 7 | М |
| Equipment Nomenclature | Equipment Model | | | | | | В | Bulletin Filename | | | | Frequency | | | | |
| Robotic Containerization System | | RCS II | | | | MM14124AD | | | | | THREE YEAR | | | | | |

| - | | | | | | | |
|---------------|------|---|-------|-------|-------|-----------|-------|
| Part or | Item | Task Statement and Instruction | Est. | Min. | | Threshold | S |
| Component | No | (Comply with all current safety precautions) | Time | Skill | Run | Pieces | Weeks |
| | | | Req | Lev | Hours | Fed | |
| | | | (min) | | | (000) | |
| | 1 | | 1 | | | | |
| CLEAN UP | 14. | Clean up. Ensure all tools, lubricants, rags, etc., | 2 | All | | | |
| | | are removed from the work area. Report all | | | | | |
| | | deficiencies to supervisor. | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | WARNING | | | | | |
| | | | | | | | |
| | | Be cautious when working around or on | | | | | |
| | | equipment when power has been | | | | | |
| | | applied. | | | | | |
| | | app | | | | | |
| SYSTEM | 15. | Restore power. Remove lockouts, restore | 3 | 9 | + | | |
| O I O I E IVI | 15. | • | _ | 9 | | | |
| | | power, and return machine to operational status | | | | | |
| | | as prescribed by the current local lockout | | | | | |
| | | instructions providing lockout/restore procedures. | | | | | |

RCS MASTER CHECKLIST

09-RCS-AB-001-M

OPERATIONAL MAINTENANCE TWO TOURS PER DAY

Time Total: 25 Minutes

Refer to MS-192 if additional maintenance information is required.

| ITEM | TASK | MULTIPLIER | TOTAL |
|------|------|------------|---------|
| | TIME | FACTOR | MINUTES |
| 1 | 1 | 1 | 1 |
| 2 | 1 | 1 | 1 |
| 3 | 1 | 3 | 3 |
| 4 | 1 | 3 | 3 |
| 5 | 1 | 3 | 3 |
| 6 | 1 | 3 | 3 |
| 7 | 2 | 3 | 6 |
| 8 | 5 | 1 | 5 |
| | _ | | 25 |

| U.S. Postal Service | IDENTIFICATION | | | | | | | | | | | | | | | |
|---------------------------------|----------------|-----------------|-----------|---------|---|--|--|---|-------------------|-----|-------|----|-----------|---|---|------|
| Maintenance Checklist | | RK | EQUIPMENT | | | | | | CLASS | | | | NUMBER | | | TYPE |
| waintenance Checklist | CO | DE | | ACRONYM | | | | | | | CO | DE | | | | |
| | 0 | 9 | R | С | S | | | | | | Α | В | 0 | 0 | 1 | M |
| Equipment Nomenclature | Equ | Equipment Model | | | | | | В | Bulletin Filename | | | | Frequency | | | |
| Robotic Containerization System | | RCS | | | | | | | MI | M14 | 124AD |) | TOUR | | | |

| Nobolic Containenz | | System RCS II WIW 14 | 124/1 | | | TOUR | |
|-----------------------------|------------|---|--------------|---------------|--------------|------------------------|-------|
| Part or Component | Item No | Task Statement and Instruction (Comply with all current safety precautions) | Est. Time | Min. Skill | | Threshold | |
| · | | | Req (min) | Lev | 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. | | 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. | | | | | |
| | | WARNING FOR EWP/PPE: Steps contained in this bulletin may require the use of Electrical Work Plan (EWP) Personal Protective Equipment (PPE). Refer to the current EWP MMO for appropriate EWP PPE and barricade requirements. | | | | | |
| MACHINE LOG | 2. | At the beginning of the tour examine machine log. Examine log and bring forward any unresolved problems from the previous tour. NOTE Operational checks must be made with machine processing mail in a normal operating mode. | | 9 | | | |
| SYSTEM GENERAL | 3. | Every two hours check for unusual sounds, odors. Be alert for unusual sounds, odors, or other indication of potential failure of the RCS. | | 9 | | | |
| SYSTEM SAFETY INDICATORS | 4. | Every two hours check warning horn and beacons. Check for proper operation of warning horns and beacons on start-ups. | | 9 | | | |

| U.S. Postal Service | IDENTIFICATION | | | | | | | | | | | | | | | |
|---------------------------------|----------------|-----------------|-----------|---|---|--|---|-------------------|------|--|------|-----------|---|-----|------|---|
| Maintenance Checklist | _ | RK | EQUIPMENT | | | | | | • | | | CLASS | | UMB | TYPE | |
| Maintenance Officekinst | CC | DE | ACRONYM | | | | | | | | CODE | | | | | |
| | 0 | 9 | R | С | S | | | | | | Α | В | 0 | 0 | 1 | M |
| Equipment Nomenclature | Equ | Equipment Model | | | | | В | Bulletin Filename | | | | Frequency | | | | |
| Robotic Containerization System | | RCS II | | | | | M |) | TOUR | | | | | | | |

| | | T 100 1 11 1 11 | | | | . | | | |
|----------------------|------------|---|--------------|---------------|-------|----------|-------|--|--|
| Part or Component | Item No | Task Statement and Instruction (Comply with all current safety precautions) | Est. Time | Min. Skill | | | | | |
| Component | INO | (Comply with all current salety precautions) | Req | Lev | Run | Pieces | Weeks | | |
| | | | (min) | LOV | Hours | Fed | | | |
| | | | ` , | | | (000) | | | |
| SYSTEM | 5. | Every two hours check lamps. Watch for | 1 | 9 | | | | | |
| INDICATORS | 5. | | | 9 | | | | | |
| INDICATORS | | proper functionality of all indicator lamps during | | | | | | | |
| | | normal machine operations. Correct deficiencies | | | | | | | |
| | | as soon as practical. | | | | | | | |
| REJECTS | 6. | Every two hours check rejects. Check the RCS | 1 | 9 | | | | | |
| | | for rejects. Determine if they are due to tray/label | | | | | | | |
| | | hygiene or scan issues. Take appropriate action | | | | | | | |
| | | as practical. | | | | | | | |
| | | • | | | | | | | |
| ACE COMPUTER | 7. | Every two hours check MPEWatch. Check to | | 9 | | | | | |
| | | ensure RCS is connected, transmitting Unit Load | | | | | | | |
| | | Transactions (ULX), and read rate is acceptable. | | | | | | | |
| ADMINISTRATIVE | 8. | At the end of tour compile the following | 5 | 9 | | | | | |
| 7.51 | 0. | information: | | | | | | | |
| | | Any work orders generated | | | | | | | |
| | | Make entries in Machine Logbook of any | | | | | | | |
| | | discrepancies found during the tour | | | | | | | |
| | | Turn this information into Maintenance | | | | | | | |
| | | Supervision. Brief personnel coming on duty | | | | | | | |