MAINTENANCE TECHNICAL SUPPORT CENTER
HEADQUARTERS MAINTENANCE OPERATIONS
UNITED STATES POSTAL SERVICE

Maintenance Management Order

SUBJECT: Preventive and Operational Maintenance Guidelines for AFSM100 (Automated Flat Sorting Machine) - Automated Induction (AIAFSM) Using eCBM

DATE: August 17, 2021

TO: All AIAFSM Sites

PUB NO: MMO-141-20
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This Maintenance Management Order (MMO) **supersedes MMO-100-12** and provides Preventive and Operational Maintenance Guidelines AFSM100 (Automated Flat Sorting Machine) - Automated Induction (AIAFSM). This bulletin applies to Acronym AIAFSM, Class Code AA.

The workhours indicated in the workload estimate (Attachment 1) are based on a 16-hour operations window and reflect the *maximum* annual workhours required to maintain each system. Actual workhour requirements and the frequency of tasks are dependent on run time and pieces processed. Therefore, PM workhour requirements will vary day-to-day based on site-specific machine utilization. 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.

Preventive Maintenance (PM) guidelines provide maintenance employees with the recommended task based maintenance activities. The Electronic Conditioned Based Maintenance (eCBM) is an abbreviated task list that represents a portion of the PM checklist. The complete master PM checklist must be accessible to all maintenance employees when performing PM and eCBM task based maintenance activities.

WARNING

Various products requiring Safety Data Sheets (SDS) may be utilized during the performance of the procedures in this bulletin. Ensure the current SDS for each product used is on file and available to all employees. When reordering such a product, it is suggested that current SDS be requested. Refer to SDS 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 Electrical Work Plan (EWP) Personal Protective Equipment (PPE). Refer to the current EWP MMO for appropriate EWP PPE and barricade requirements.

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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Attachments
1. Summary of Workload Estimate For AIAFSM System
2. Master Checklist 03-AIAFSM-AA-001-M – AIAFSM Preventive Maintenance (PM)
3. Master Checklist 09-AIAFSM-AA-001-M – AIAFSM Operational Maintenance (OM)

ATTACHMENT 1

SUMMARY WORKLOAD ESTIMATE

FOR AIAFSM SYSTEM

Number of mailpieces Processed for 1 Year >			SUMMARY WORK LOAD ESTIMATES FOR AIAFSM High end estimate					
Operation Days	Routine Servicing per Machine	Repair Time per Machine	Routine Servicing + Repair Time	Non-Productive Time per Machine**	Total Servicing per Machine	Operational Maintenance + Total Servicing		
	(Hrs/Yr)	(Hrs/Yr)*	(Hrs/Yr)	(Hrs/Yr)	(Hrs/Yr)	1 Tour Hrs/Yr OpM x 1	2 Tours Hrs/Yr OpM x 2	3 Tours Hrs/Yr OpM x 3
5 Days	357.21	107.16	464.37	23.22	487.59	617.59	747.59	747.59
6 Days	406.61	121.98	528.59	26.43	555.02	711.02	867.02	867.02
7 Days	456.01	136.80	592.81	29.64	622.45	804.45	986.45	986.45

* Repair maintenance estimates based on 30% of preventive maintenance.

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

THRESHOLDS and PM TIME SUMMARY Hrs PER Year			OPERATIONAL MAINTENANCE		
Daily	345.80		30 MIN. PER DAY PER MACHINE		
112	54.60		One Tour	Two Tours	Three Tours
480	46.51	5 Day	130.00	260.00	260.00
2,880	9.10	6 Day	156.00	312.00	312.00
		7 Day	182.00	364.00	364.00

ATTACHMENT 2

AIAFSM MASTER CHECKLIST

03-AIAFSM-AA-001-M

PREVENTIVE MAINTENANCE (PM)

Time Total: (106) minutes

U.S. Postal Service Maintenance Checklist	IDENTIFICATION																
	WORK CODE		EQUIPMENT ACRONYM								CLASS CODE		NUMBER			TYPE	
	0	3	A	I	A	F	S	M			A	A	0	0	1	M	
Equipment Nomenclature: Automated Flat Sorting Machine – Automated Induction	Equipment Model:										Bulletin Filename: mm20137					Occurrence: eCBM	

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. 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 or appropriate EWP PPE and barricade requirements. **WARNING:** Various products requiring Safety Data Sheets (SDS) may be utilized during the performance of the procedures in this bulletin. Ensure the current SDS for each product used is on file and available to all employees. When reordering such a product, it is suggested that current SDS be requested. Refer to SDS for appropriate personal protective equipment.	1	All			

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.
AI MACHINE: AI CONTROL PC	2**	**Perform system shutdown.** Perform proper shut down of Ai Control PC prior to powering down Ai Power Distribution Cabinet.	4	10			D
AI MACHINE:	3**	**Power down and lockout power and air.** Lockout machine according to current local Energy Control Procedures.	5	All			D
AI MACHINE: ALL	4**	**Mail search all Ai Modules.** 1. Perform mail search of all modules beginning at Tilter and working toward prep stations, follow Upper and Lower ACT conveyors. Check for mail at each feeder module including VRL units. Search for mail under Incline and Spur conveyors trapped between cover and belts. 2. During mail search, observe general condition of conveyor assemblies, squeeze rails, indicator lenses, and E-Stop switches. Check for missing motorized drive roller O-ring belts. 3. Remove any debris found on conveyors and/or conveyor photocells.	15	07			D
VERTICAL RECIPROCATING LIFT-Al	5**	**VRL Wiper Kit Replacement, Cleaning and Lubrication** Clean, lubricate, and replace wiper kits PSN 7920-12-000-1705 per MMO-072-09. *30 minutes per VRL	90*	09	2880		
UPPER & LOWER ACT TRANSPORT: FTU	6	**General.** Clean the sleeved FTU rollers of any impacted dust or debris. Inspect rollers for torn or missing sleeves and replace if any defects are found. *2 minutes per Flexible Turning Unit	12*	09	16		
TILTER MODULE: PHOTO CELL AND REFLECTOR	7	**Clean the following components:** Using a microfiber glove (PSN 8415-06-000-7500) or soft lint free rag remove any dust or debris in the Tilter Module photocells and reflectors.	1	07	112		
LOAD STATION: SIDE FLEXING CONVEYOR PHOTOCELL AND REFLECTOR	8	**Clean the following components:** Using a microfiber glove (PSN 8415-06-000-7500) or soft lint free rag remove any dust or debris from the Tilter Module photocells and reflectors.	1	07	112		
LOAD STATION: SIDE FLEXING CONVEYOR	9	**Clean the following components:** Vacuum and clean any accumulation of dust or debris from the Side Flexing Conveyor.	1	07	480		

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.
LOAD STATION: HALF PREP	10	**Clean the following components:** Using a microfiber glove or soft lint free rag and vacuum, remove any dust or debris in the Half Prep station: 1. Vacuum and clean any accumulation of dust or debris from the Pivot Table motor, and Pivot Table motorized drive rollers, and accumulation chutes. 2. Clean Pivot Table photocell and reflector. 3. Clean Pivot Table release photocell. 4. Clean linear actuator photocells. Remove the Half Prep station side cover. 5. While side cover is off, visually check linear actuator belt for cracks, missing teeth, etc. 6. Install Half Prep station side cover. 7. Annotate deficiencies and notify supervisor.	11	07	112		
INCLINE CONVEYOR: PHOTO CELL AND REFLECTOR	11	**Clean the following components:** Using a microfiber glove (PSN 8415-06-000-7500) or soft lint free rag remove any dust or debris from the Incline Conveyor photocells and reflectors.	1	07	112		
BUNDLE DISTRIBUTION CONVEYOR: PHOTO CELL AND REFLECTOR	12	**Clean the following components:** Using a microfiber glove (PSN 8415-06-000-7500) or soft lint free rag remove any dust or debris from the Bundle Distribution Conveyor photocells and reflectors.	1	07	112		
BUNDLE DISTRIBUTION CONVEYOR	13	**Clean the following components:** Vacuum and clean any accumulation of dust or debris from the Bundle Distribution Conveyor.	3	07	480		
ACCUMULATION CHUTE CONVEYOR: PHOTO CELL AND REFLECTOR	14	**Clean the following components:** Using a microfiber glove (PSN 8415-06-000-7500) or soft lint free rag, remove any dust or debris from the Accumulation Chute photocells and reflectors. * 1 minute per Accumulation Chute Conveyor.	4*	07	112		
ACCUMULATION CHUTE CONVEYOR	15	**Clean the following components:** Vacuum and clean any accumulation of dust or debris from the Accumulation Chutes. * 1 minute per Accumulation Chute Conveyor.	4*	07	480		

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.
PREP STATIONS	16	**Clean the following components:** Using a microfiber glove or soft lint free rag and vacuum, remove any dust or debris in each Prep Station: 1. Vacuum and clean any accumulation of dust or debris from the Work Table, Pivot Table motor, and Pivot Table motorized drive rollers, and accumulation chutes. 2. Clean Work Table photocell and reflector. 3. Clean Pivot Table photocell and reflector. 4. Clean Pivot Table release photocell. 5. Clean Linear Actuator photocells. Remove side cover from the Prep station. 6. While side cover is off, visually check linear actuator belt for cracks, missing teeth, etc. 7. Install Prep station side cover. 8. Annotate deficiencies and notify supervisor. * 11 minutes per Prep Station.	44*	07	480		
LOWER ACT TRANSPORT CONVEYOR	17	**Clean the following components:** Using a microfiber glove or soft lint free rag and vacuum, remove any dust or debris in each Lower ACT Transport Conveyor: 1. Clean Slim Line Right Angle Divert (SRD) photocells and reflectors. 2. Vacuum and clean any accumulation of dust or debris from the Flexible Turning Units (FTUs) on the Lower ACT Transport. This requires a thin attachment that allows access between the rollers on the FTU. 3. Clean FTU photocells and reflectors. 4. Clean barcode scanners glass screens. 5. Clean Lower ACT Conveyor photocells and reflectors.	22	07	480		
VERTICAL RECIPROCATING LIFT-PREP	18	**Clean the following components:** Using a microfiber glove or soft lint free rag and vacuum, remove any dust or debris in each Vertical Reciprocating Lift-Prep (VRL-P): 1. Clean VRL-P photocells and reflectors. 2. Clean VRL-shelf photocell.	4	07	112		

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.
		3. Vacuum and clean any accumulation of dust or debris from the VRL Lift Table. 4. Visually check VRL-P linear actuator belt for cracks, missing teeth, etc.					
AI FEEDER MODULE: PHOTO CELL AND REFLECTOR	19	**Clean the following components:** Using a microfiber glove or soft lint free rag and vacuum, remove any dust or debris in each Ai-Feeder Module: 1. Clean ACT Carrier photocells. 2. Clean Manual Paddle photocell. 3. Clean light curtain barriers. *1 minute per feeder	3*	07	112		
AI FEEDER MODULE: LINEAR ACTUATOR BELT	20	**Check the Upper and Lower X-Axis and Z-Axis Linear Actuator belts.** 1. Remove A1 Feeder paddle covers. 2. Visually check Upper and Lower X-Axis and Z-Axis Linear Actuator belts for cracks, missing teeth, etc. 3. Replace A1 Feeder paddle covers. * 2 minutes per AI Feeder Module	6*	07	112		
VERTICAL RECIPROCATING LIFT - FEEDER	21	**Clean the following components:** Using a microfiber glove or soft lint free rag and vacuum, remove any dust or debris in each Vertical Reciprocating Lift - Feeder (VRL-F): 1. Clean VRL-F photocells and reflectors. 2. Clean VRL-shelf photocell. 3. Vacuum and clean any accumulation of dust or debris from the VRL Lift Table. 4. Visually check linear actuator belt for cracks, missing teeth, etc. * 4 minutes per AI Feeder Module	12*	07	480		
ACT ELEVATED BUFFER LOOP	22	**Clean the following components:** Using a microfiber glove or soft lint free rag and vacuum, remove any dust or debris in each ACT Elevated Buffer Loop (Over Feeders): 1. Clean Elevated Buffer Loop conveyor photocells and reflectors.	19	07	480		

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.
		2. Clean Low Cost Right Angle Divert (LCR) photocells and reflectors. 3. Vacuum and clean any accumulation of dust or debris from the Flexible Turning Units (FTUs) on the ACT Elevated Buffer Loop. This requires a thin attachment that allows access between the rollers on the FTU. 4. Clean FTU photocells and reflectors. 5. Clean barcode scanners glass screens.					
UPPER ACT TRANSPORT: PE CELLS, REFLECTOR, SCANNER GLASS	23	**Clean the following components:** Using a microfiber glove or soft lint free rag and vacuum, remove any dust or debris in each Upper ACT Transport: 1. Clean Upper ACT Transport Conveyor photocells and reflectors. 2. Clean barcode scanners glass screens.	15	07	112		
AI CONTROL PC: AIR FILTER	24**	**Remove and clean the Ai Control PC air filter.** Replace if impacted dirt and debris cannot be removed by vacuuming.	1	07	112		
INCLINE CONVEYOR:	25**	**General - Incline Conveyor.** 1. Remove bottom Plexiglas covers from the Incline Conveyors. 2. Remove dust and debris. Vacuum and clean any accumulation of dust or debris from the Incline Conveyor cover and bottom side of the conveyor. 3. Install bottom Plexiglas covers. 4. Vacuum and clean any accumulation of dust or debris from the top side of the Incline Conveyor.	20	07	480		
SPUR CONVEYOR:	26**	**General - Spur Conveyors.** 1. Remove bottom Plexiglas cover from the Spur Conveyor 2. Remove dust and debris. Vacuum and clean any accumulation of dust or debris from Spur Conveyor cover and bottom side of Spur Conveyor. 3. Install bottom Plexiglas cover. * 5 minutes per Spur Conveyor.	20*	07	480		

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.
LOWER ACT TRANSPORT CONVEYOR: FTU	27**	**General - Flexible Turning Unit.** 1. Remove Plexiglas side cover from the FTU. 2. Remove dust and debris. Vacuum and clean any accumulation of dust or debris on rollers and from within the FTU. 3. Reinstall Plexiglas side cover. * 2 minutes per Flexible Turning Unit.	8*	07	480		
UPPER ACT TRANSPORT: FTU	28**	**General - Flexible Turning Unit.** 1. Remove bottom cover from FTU. 2. Remove dust and debris. Vacuum and clean any accumulation of dust or debris on rollers and from within the FTU. 3. Install bottom cover. * 7 minutes per Flexible Turning Unit.	14*	07	480		
BUNDLE DISTRIBUTION: TILTER	29**	**Tilter.** 1. Remove dust and debris. Vacuum and clean any accumulation of dust or debris on rollers and from within the Tilter Module. 2. Visually check the Tilter finger guard to ensure that it is fastened securely.	2	07	480		
BUNDLE DISTRIBUTION: TILTER	30**	**Tilter Module.** 1. Visually check hydraulic motor/pump and cylinders for visible oil leaks. 2. Clean hydraulic motor/pump breather cap. 3. Notify supervisor of oil leaks.	10	07	2880		
LOAD STATION: SIDE FLEXING CONVEYOR	31**	**Side Flexing Conveyor.** 1. Visually check Side Flexing Conveyor link belt for wear. 2. Replace Side Flexing Conveyor wear strips with Wear Strip Kit PSN 3915-16-000-7945.	30	07	2880		
BUNDLE DISTRIBUTION CONVEYOR:	32**	**Bundle Distribution Conveyor.** Replace Bundle Distribution Conveyor wear strips.	30	07	2880		
ACCUMULATION CHUTE: AIR COMPONENTS	33**	**WARNING: Installation of the Accumulation Chute bottom cover requires two persons.** **Accumulation Chute.** 1. Check Accumulation Chute Air Components. 2. Pull bottom cover off and check for air leaks.	100*	07	2880		

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.
		3. Vacuum dust debris from bottom cover. 4. Reinstall bottom cover. *25 minutes per Accumulation Chute.					
AI SYSTEM: MOTOR/GEAR CASE	34	**General.** Visually check the following motors and gear cases for oil leaks. Annotate any deficiencies and notify supervisor: 1. Half Prep Station Linear Actuator Motor/Gear case. 2. Load Station Side Flexing Conveyor Motor/Gear case. 3. Incline Conveyor Drive Motor/Gear case. 4. Spur Conveyor Drive Motor/Gear case. 5. Prep Station Linear Actuator Motor/Gear case. 6. Bundle Distribution Conveyor Drive Motor/Gear case. 7. Lower ACT Transport FTU Motor/Gear case. 8. Upper ACT Transport FTU Motor/Gear case. 9. VRL-P Drive Motor/Gear case. 10. VRL-F Drive Motor/Gear case. 11. AI Feeder Module Upper X-Axis, Lower X-Axis, and Z-Axis Drive Motor/Gear cases.	10	07	2880		
AI MACHINE:	35**	**WARNING: Be cautious when working around or on equipment when power has been applied.** **Restore Ai to service.** 1. Restore power and air to the Ai system as prescribed by the local lockout procedure. 2. Observe all indicators during power up for correct operation.	5	10			D
AI CONTROL PC: DATABASE	36**	**CAUTION: Do not interrupt recovery process. Database corruption or data loss could result.** Perform a repair and compress on the Ai database.	5	10	112		
AI FEEDER MODULE: CONTROL PANEL	37	**Run ACT Cycle Test.** 1. Place all feeders in maintenance mode from the MIS computer. 2. Perform the Ai Cycle ACT test (thumbwheel test 07) on each Ai Feeder to validate	10	09	112		

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.
		functionality. This test will require an empty ACT for each feeder. 3. Place all Ai Feeders back in operations mode from the MIS computer.					
PREP STATIONS: AIR COMPONENTS	38	**Check Prep Station Air Pressure Regulator.** Check for correct air pressure (27+/-2 psi). Notify supervisor of deficiencies.	2	07	480		
BUNDLE DISTRIBUTION: AIR COMPONENTS	39	**Bundle Distribution - Air Components.** 1. Visually check the Bundle Distribution Air Pressure Regulator for proper air pressure (50-psi ± 5psi). 2. Clean Bundle Distribution Air Pressure Regulator Moisture Separator. 3. Visually check Air Pressure Regulator Moisture Separator. Notify supervisor of deficiencies.	2	07	480		
UPPER ACT TRANSPORT: ON-DEMAND BUMP TURN	40	**On-Demand Bump Turn.** 1. Check Upper ACT Transport On-Demand Bump Turn Air Pressure Regulator for proper air pressure (45+/-5psi). 2. Notify supervisor of deficiencies. **NOTE:** C and D configurations only. Local sites will determine Ai system configuration.	2	07	480		
AI SYSTEM: E-STOPS	41**	**WARNING: Be cautious when working around or on equipment when power has been applied.** **AFSM100-Ai E-Stops.** 1. Start the Bundle Distribution Conveyor and each Prep Station. 2. Actuate the E-Stop switch on the Load Station Control Panel. 3. Observe that the Bundle Distribution Conveyor and all Prep Stations stop. 4. Observe that the lamp inside the E-Stop switch illuminates. 5. Observe Control Panel E-Stop Light illuminates and LCD display reports which E-Stop was pressed. 6. Observe Sort Module Minitron displays E-Stop message for E-Stop that was pressed. 7. Observe that red lights on the light stacks illuminate.	25	07	480		

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.
		8. Reset E-Stop switch. 9. Repeat Steps 1 – 8 for each of the following Emergency Stop switches: a. Half Prep Station - Pivot Table E-Stop switch. b. VRL-P - Control Panel E-Stop switch. c. Lower Loop/ Upper Conveyor - E-Stop switch. d. Prep Station #1 - Control Panel E-Stop Switch and Pivot Table E-Stop switch. e. Prep Station #2 - Control Panel E-Stop Switch and Pivot Table E-Stop switch. f. Prep Station #3 - Control Panel E-Stop Switch and Pivot Table E-Stop Switch. g. Prep Station #4 - Control Panel E-Stop Switch and Pivot Table E-Stop switch. h. Bundle Distribution Conveyor - Left Side Bundle Distribution Conveyor E-Stop switches. i. Tilter E-Stop switches. 10. Notify supervisor of deficiencies.					
AI SYSTEM: INTERLOCKS	42**	**Test each interlock switch.** 1. Open each cover and door, one at a time, and check interlocks. Close each cover and door after making required observation. 2. Observe that the Prep Stations stop and the Bundle Distribution Conveyor continue to run. Check that all associated lamps and messages on the operator control panel LCD displays and Minitron displays properly report each interlock switch actuation. 3. Observe that Bundle Distribution Conveyor stops when Load Station Electronics Panel is opened. Check that all associated lamps and message on the operator control panel LCD displays and Minitron displays properly report each interlock switch actuation. 4. Observe that the VRL-P and VRL-F stop when each VRL Electronics Panel is opened. Check that all associated lamps and message on the operator control panel LCD displays and	30	07	480		

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.
		Minitron displays properly report each interlock switch actuation. 5. Observe that the Ai-Feeder Paddle stops when the Feeder Light Curtain is breeched. Ensure that the air dump valve dumps the current air pressure and the Ai Feeder paddle glides to a rest on the Feeder Table. Check that all associated lamps and message on the operator control panel LCD displays and Minitron displays properly report each interlock switch actuation. 6. Report any malfunctions to supervisor.					
AI SYSTEM: POWER PANELS	43	**Check Ai Electrical Cabinets with thermal imaging device.** 1. Open Ai Power Distribution Cabinet, Load Station electronics panel, all Prep Station electronics panels, VRL-P electronics panel, and Feeder Ai power panels. 2. Scan the power and electronics cabinet/panels for abnormal hot spots. 3. Close all open panel doors. 4. Notify supervisor of deficiencies	20	09	480		
FINAL-CLEANUP	44	**Clean Up** 1. Ensure all tools, lubricants, rags, etc., are removed from the work area. 2. Note any deficiencies and generate a work order/report them to supervisor.	15	All			

The tasks marked with one asterisk, after the time required, are per unit tasks.

The tasks marked with two asterisks, after the item number, are critical tasks.

ATTACHMENT 3

AIAFSM MASTER CHECKLIST

09-AIAFSM-AA-001-M

OPERATIONAL MAINTENANCE (OM)

Time Total: (30) minutes

U.S. Postal Service Maintenance Checklist	IDENTIFICATION																
	WORK CODE		EQUIPMENT ACRONYM								CLASS CODE		NUMBER			TYPE	
	0	9	A	I	A	F	S	M			A	A	0	0	1	M	
Equipment Nomenclature: Automated Flat Sorting Machine – Automated Induction	Equipment Model:										Bulletin Filename: mm20137					Occurrence: eCBM	

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. 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 or appropriate EWP PPE and barricade requirements. **WARNING:** Various products requiring Safety Data Sheets (SDS) may be utilized during the performance of the procedures in this bulletin. Ensure the current SDS for each product used is on file and available to all employees. When reordering such a product, it is suggested that current SDS be requested. Refer to SDS for appropriate personal protective equipment.	1	All			

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.
AI MACHINE:	2	**WARNING: Be cautious when working around or on equipment when power has been applied.** **Safety Statement.** Comply with all safety precautions. Refer to local AFSM100 operational maintenance Job Safety Analysis. Wear appropriate personal protective equipment as applicable for each task. Check for suspicious dust or unusual debris when opening equipment for inspection and maintenance. If any unusual substance is found, notify supervisor prior to proceeding with any further action on the equipment. **General** The intent of this operational checklist is to monitor equipment condition, and identify and correct minor deficiencies during the operational tour. Ask the operations supervisor if there are any equipment problems. Investigate reported problems. Check Maintenance logbook for any outstanding issues. Annotate deficiencies found and corrective action taken during the performance of this maintenance checklist in the Maintenance logbook. Initiate action to correct unresolved deficiencies by notifying the Maintenance Supervisor and/or by generating Work Order(s) as per local SOP.	1	09			T
AI MACHINE: AI CONTROL PC	3	**Ai Control PC.** 1. Verify that the correct number of ACTs is on the Ai System. 2. Check for warnings on AFSM-Ai diagram. Evaluate Ai Control PC bottom screen for faults such as photocell low gain warnings, red or yellow indicators, and low VAC warnings. 3. Observe the PLC Communications screen to verify that all PLCs are responding to the AI Control PC with the heartbeat messages. (Should be toggling from 1 to 0.)	1	09			T
AI MACHINE: AI FEEDER MODULES	4	**Ai – Feeder Modules and VRL-F.** 1. Observe warning lamps, warning horns, and startup delay operate properly. 2. Observe ACTs as they enter and exit VRL-F. Ensure there is a smooth transition from the Feeder Spurs to the VRL-F and from the VRL-F to the Elevated Buffer Loop.	2	09			T

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.
		3. Observe the ACTs on the VRL lift table as it descends to the ACT Carrier. Observe the transition from the VRL to the ACT Carrier. This should be a smooth transition and ACT to fall squarely on the ACT Carrier. 4. Observe the movement of the ACT Carrier as the ACT is positioned, the Ai – Feeder Paddle as the ACT door is removed, the mail is extracted from the ACT, and the door is replaced. 5. Observe Ai – Feeder Module operation for proper paddle motion, belt motion, mailpiece presentation, and pickoff. Listen for unusual noise and observe for excessive vibration. 6. Observe the Ai – Feeder Module Safety Light Curtain functions properly when tripped. The Ai paddle dump valve should dump the current air on the system and paddle should glide to a rest on the feeder table.					
AI MACHINE: LOAD STATION	5	**Ai Load Station.** 1. Observe warning lamps, warning horns, and startup delay operate properly. 2. Observe the Ai Tilter module movement as the operator raises and lowers the tilter. Listen for unusual noise and observe for excessive vibration. 3. Observe the Side Flexing Conveyor link belt for condition and tracking. Listen for unusual noise emanating from the drive motor or gear case. 4. Observe the Incline Conveyor belts for condition and tracking. Listen for unusual noise emanating from the drive motor or gear case. 5. Observe the Half Prep station operation as empty ACTs enter the Pivot Table, the Pivot Table transition to the lower loop, and full ACTs exit the Pivot Table. Listen for unusual noise and observe for excessive vibration as the Pivot Table transitions up and down.	2	09			T
AI MACHINE: VRL-P	6	**VRL-P.** 1. Observe ACTs as they enter and exit the VRL-P. Ensure there is a smooth transition from the Upper and Lower ACT Transport Conveyors. 2. Observe the VRL-P lift table movement is smooth as it transitions from each level. Erratic	1	09			T

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.
		movement could be due to linear actuator belt tension or condition.					
AI MACHINE: BUNDLE DISTRIBUTION	7	**Bundle Distribution.** 1. Observe warning lamps, warning horns, and startup delay operate properly. 2. Observe Bundle Distribution Conveyor belt for condition and tracking. Look for missing rollers on belt. Listen for any unusual noise emanating from the drive motor or gear case. 3. Observe the Bundle Distribution Conveyor pop-up diverts function properly. Listen for air leaks or any unusual noise emanating from under the conveyor. 4. Observe the Spur Conveyor Belts condition and tracking. Ensure that none of the belts are binding. Listen for unusual noise emanating from the drive motor or gear case. 5. Observe the Accumulation Chute brakes are functioning as mail bundles pass through each photocell. Listen for air leaks from the brake air pucks. Look for missing rollers on the Accumulation Chute belt.	2	09			T
AI MACHINE: PREP STATIONS	8	**Prep Stations.** 1. Observe the Prep Station operation as empty ACTs enter the Pivot Table, the Pivot Table transitions to the lower loop, and full ACTs exit the Pivot Table. 2. Listen for unusual noise and observe for excessive vibration as the Pivot Table transitions up and down.	2	09			T
AI MACHINE: UPPER AND LOWER ACT TRANSPORT	9	**Upper and Lower ACT Transport.** 1. Observe general operation of the Upper and Lower Transport system. 2. Observe the Upper and Lower Transport system for missing O-ring belts and the transition of ACTs from zone to zone.	2	09			T
GENERAL:	10	**Conclusion.** 1. Annotate deficiencies found and repairs performed in the Maintenance logbook. 2. Notify supervisor and/or general work orders per local SOP to document/initiate corrective maintenance activity for deficiencies found.	1	09			T

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.
FINAL-CLEANUP	11	**Clean Up** 1. Ensure all tools, lubricants, rags, etc., are removed from the work area. 2. Note any deficiencies and generate a work order/report them to supervisor.	15	All			