MAINTENANCE TECHNICAL SUPPORT CENTER HEADQUARTERS MAINTENANCE OPERATIONS UNITED STATES POSTAL SERVICE



Maintenance Management Order

SUBJECT: Preventive and Operational Maintenance

Guidelines for TR1 Modified Automated Flat Sorter Machine 100 (AFSM100) With and Without Automatic Tray Handling System

(ATHS)

TO: All AFSM100 Sites PUB NO: MMO-144-20 FILE CODE: H8H, H8I

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DATE: August 25, 2021

REV LEVEL: af

This Maintenance Management Order (MMO) provides Preventive and Operational Maintenance Guidelines for TR1 modified Automated Flat Sorter Machine 100 (AFSM100) with and without Automatic Tray Handling System (ATHS). This bulletin applies to Acronym AFSM100, Class Codes AF and AG.

The work hours indicated in the workload estimate (Attachment 1) are based on a 16-hour operations window and reflect the maximum annual work hours required to maintain each system. Actual work hour requirements and the frequency of tasks are dependent on run time and pieces processed. Therefore, PM work hour 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.

Web Access: https://www1.mtsc.usps.gov

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.

Frederick L. Jackson III Executive Manager

Maintenance Technical Support Center

Asset Maintenance Planning, Performance and Support

- 1. Summary of Workload Estimates For AFCM100 System
- 2. AFSM 100 (Non ATHS) TR 1 Master Checklist 03-AFSM100-AF-001-M Preventive Maintenance (PM)
- 3. AFSM 100 (ATHS) TR 1 Master Checklist 03-AFSM100-AG-002-M Preventive Maintenance (PM)
- 4. AFSM 100 (Non ATHS) TR 1 Master Checklist 09-AFSM100-AF-001-M Operational Maintenance (OM)
- 5. AFSM 100 (ATHS) TR 1 Master Checklist 09-AFSM100-AG-002-M Operational Maintenance (OM)
- 6. AFSM 100 (ATHS & Non ATHS) TR 1 Master Checklist 09-AFSM100-**-003-M Operational Maintenance (OM)

ATTACHMENT 1

SUMMARY of WORKLOAD ESTIMATES

FOR AFSM100 SYSTEM

	SUMM	MARY WO	RK LOAD E	STIMATES FO	OR AFSM10	0_AF						
			(non A	THS TR1)								
Operation	Routine	Repair	Routine	Non- Productive	Total	Maintena	ational nce + Total vicing					
Days	Servicing per	Time per	Servicing + Repair	Time per	Servicing per	1 Tour	2 Tours					
	Machine	Machine (Hrs/yr)	Time	Machine	Machine	Hrs/Yr	Hrs/Yr					
	(Hrs/Yr)	*	(Hrs/Yr)	(Hrs/yr) **	(Hrs/Yr)	OpM x 1	OpM x 2					
5 Days	1443.88	433.16	1877.04	187.70	2064.75	2,298.75	2,424.42					
6 Days	1622.41	486.72	2109.13	210.91	2320.05	2,600.85	2,751.65					
7 Days	1800.94	540.28	2341.22	234.12	2575.34	2,902.94	3,078.88					
*	* Repair maintenance estimates based on 30% of preventive maintenance.											
**	Based on	10% of to	tal PM and	repair.								

	SUMN	MARY WO	RK LOAD E	STIMATES FO	OR AFSM10	0 AG						
			(ATI	HS TR1)								
Operation	Routine	Repair	Routine	Non- Productive	Total	Maintena	ational nce + Total vicing					
Days	Servicing per	Time per	Servicing + Repair	Time per	Servicing per	1 Tour	2 Tours					
	Machine	Machine (Hrs/yr)	Time	Machine	Machine	Hrs/Yr	Hrs/Yr					
	(Hrs/Yr)	*	(Hrs/Yr)	(Hrs/yr) **	(Hrs/Yr)	OpM x 1	OpM x 2					
5 Days	1648.02	494.41	2142.43	214.24	2356.67	2,590.67	2,716.34					
6 Days	1864.69	559.41	2424.10	242.41	2666.51	2,947.31	3,098.11					
7 Days	2081.36	624.41	2705.77	270.58	2976.34	3,303.94	3,479.88					
*	* Repair maintenance estimates based on 30% of preventive maintenance.											
**	Based on	10% of to	tal PM and	repair.								

	OPERAT	IONAL MAIN	TENANCE									
	non ATHS TR1											
	One Tour	One Tour Two Tours Three Tours										
5 Day	234.00	359.67	N/A									
6 Day	280.80	431.60	N/A									
7 Day	327.60 503.53 N/A											

	OPERAT	ONAL MAIN	TENANCE											
		ATHS TR1												
	One Tour	One Tour Two Tours Three Tours												
5 Day	234.00	359.67	N/A											
6 Day	280.80	431.60	N/A											
7 Day	327.60	327.60 503.53 N/A												

ATTACHMENT 2

AFSM100 (NON ATHS) TR1 MASTER CHECKLIST

03-AFSM100-AF-001-M

PREVENTIVE MAINTENANCE (PM)

Time Total: (1381) minutes

U.S. Postal Service								IDE	NTIF	ICAT	ION					
Maintenance Checklist		RK DE									CLASS CODE		NUMBER			TYPE
	0	3	Α	F	S	М	1	0	0		Α	F	0	0	1	М
Equipment Nomenclature Automated Flats Sorting Machine 100		•	nt Mo 100 (TA I	HS)	TR′	1			ilename 0140	e			irrend CBM	-

	<i>5</i> 0							
Part or Component	Item	Task Statement and Instruction		Est.	Min.	Т	hresholds	6
	No	(Comply with all current safety precaution	ns)	Time Req (min)	Skill Lev	Run Hours	Pieces Fed (000)	Freq.
SAFETY STATEMENT	1**	COMPLY WITH ALL SAFETY PRECAUTION Disconnect power and apply lockouts when reby this instruction. Refer to current local lock procedures to properly shut down and lock our machine. Check for suspicious dust or unusudebris. If any unusual substance is found, no supervisor prior to proceeding with any furthe on the equipment.	equired out ut this ual otify	1	All			
		THE USE OF COMPRESSED OR BLOWN A PROHIBITED. When cleaning is required, an alternative cleamethod such as a HEPA filtered vacuum cleamethod such as a HEPA filtered vacuum cleamed a damp rag must be used in place of compressions blown air. A lint-free cloth or brush may be used optical equipment only when other cleaning mannot be used. Report safety deficiencies to supervisor immediately upon detection.	aning aner or ssed or sed on nethods					
		WARNING FOR EWP/PPE: Steps containe this bulletin may require the use of Electric Work Plan (EWP) Personal Protective Equi (PPE). Refer to the current EWP MMO or appropriate EWP PPE and barricade requirements.	cal					
		WARNING: Various products requiring Saf Data Sheets (SDS) may be utilized during to performance of the procedures in this bull Ensure the current SDS for each product upon file and available to all employees. Whereordering such a product, it is suggested current SDS be requested. Refer to SDS for appropriate personal protective equipments	the letin. used is en I that or					

Part or Component	Item		Task Statement and Instruction	Est.	Min.	TI	hresholds	s
	No	(C	omply with all current safety precautions)	Time	Skill	Run	Pieces	
		,		Req	Lev	Hours	Fed	•
				(min)			(000)	
MAIN MACHINE:			n system shutdown.	5	09			D
MIS/USV			own system using MS-178 Vol B Shutdown					
CONTROL			ckout Procedures.					
MAIN MACHINE:	3**	Lock o	ut power.	5	All			D
MAIN		Lockou	t machine according to current local Energy					
ELECTRICAL			Procedures					
CABINET								
MIS/USV SYSTEM:	4**	Remov	e and clean filters.	5	07			1
ENTIRE SYSTEM		Replac	e filters when impacted dirt and debris cannot					
			oved by vacuuming.					
			Clean filter in each rear door of the					
			supervisor station.					
		2.	Clean filter each computer (MIS and USV).					
			Reinstall all filters.					
MAIN MACHINE:	5**	Mail se	earch the entire AFSM100 System by	16	07			D
ENTIRE SYSTEM			ning the following steps:					
		1.	Perform mail search beginning at infeed					
			station 1 by opening all hinged covers and					
			doors on each infeed station, perform mail					
			search and leave covers open.					
		2.	Continue to the right side of the level					
			change module by bin 1. Check for mail on					
			perforated screen underneath bucket					
			assemblies and on the floor.					
		3.	Continue to the right side of the sort					
			modules and perform a mail search					
			beginning at bin 1, working toward the drive module.					
			 a. Remove any debris found on 					
			conveyor and/or conveyor					
			photocells.					
			b. Search for mail in mail chutes.					
		4.	Continue to the Drive Module and search for					
			mail on expanded metal guards under drive					
			module at the entrance to the maintenance					
		_	alley.					
		5.	Continue to the left side of the sort modules					
			and perform a mail search beginning at bin					
			61, working toward the level change module.					
			a. Remove any debris found on					
			conveyor and/or conveyor					
			photocells.					
			b. Search for mail in mail chutes.					
		6.	Continue to the left side of the level change					
		0.	module by bin 120. Check for mail on					
			perforated screen underneath bucket					
			assemblies and on the floor.					
		7.	Continue to the injector side of the infeed					
			stations and check for mail on the floor					
			underneath the injectors.					

Part or Component	Item	Task Statement and Instruction	Est.	Min.	ТІ	hresholds	3
art of Component	No	(Comply with all current safety precautions)	Time	Skill	Run		Freq.
	''	(Comply with all current salety presautions)	Req	Lev	Hours	Fed	ı ıcq.
			(min)	201	riours	(000)	
INFEED STATION:	6**	Remove debris.	9*	07		25	
FEEDER MODULE		Remove any buildup of debris from the	Ü	0.		_0	
		Destacker central vacuum chamber screen.					
		2. Remove visible debris such as loose FICS					
		labels and mail piece fragments.					
		*3 minutes per feeder					
INFEED STATION:	7**	Remove dust and debris.	9*	07		220	
FEEDER MODULE		Vacuum and clean any accumulation of dust or	-				
		debris from the mail transport in the feeder,					
		OCR/ICS, and 950 modules.					
		* 3 minutes per infeed station					
INFEED STATION:	8**	Clean destacker module.	12*	07		220	
FEEDER MODULE		Brush and vacuum the destacker low	12	01		220	
I LLDLK WODOLL		vacuum chamber plate. Replace the					
		vacuum plate (NSN 3915-05-000-2458)					
		when impacted debris cannot be removed					
		by vacuuming.					
		2. Remove and clean the interior filter screen.					
		Replace the interior filter (NSN 4330-05-					
		000-2273) when impacted debris cannot be					
		removed by vacuuming.					
		3. Remove canister filter and clean by					
		vacuuming. Replace the canister filter (NSN					
		4330-05-000-2274) when impacted dirt and					
		debris cannot be removed by vacuuming.					
		* 4 minutes per infeed station.					
INFEED STATION:	9**	Check and clean feeder vacuum filters.	6*	07		1540	
FEEDER MODULE		Clean destacker/tilter module vacuum filter. Replace					
		filter when impacted dirt and debris cannot be					
		removed by vacuuming.					
		Remove the filter element from the vacuum					
		pump and clean by vacuuming with a HEPA					
		vacuum. 2. Reinstall vacuum pump filter.					
		·					
INFEED STATION:	10**	* 2 minutes per infeed station. Replace vacuum pump carbon vanes.	30*	07		13200	
FEEDER MODULE	10	Remove vacuum pump plastic front cover.	50	UI		13200	
LEDER WOODEL		Remove vacuum pump regulator.					
		3. Remove cast iron front cover.					
		Remove and replace all six carbon vanes					
		NSN 3455-05-000-7867.					
		Install the cast iron front cover.					
		6. Install the vacuum pump regulator.					
		7. Install the vacuum pump plastic cover.					
		* 10 minutes per infeed station.					<u> </u>
INFEED STATION:	11**	Replace the vacuum system MAC Valves.	60*	09		13200	
FEEDER MODULE		Remove and replace MAC valves.					
L	l				1		

Part or Component			Task Statement and Instruction	Est.	Min.		hresholds	
	No	(C	omply with all current safety precautions)	Time	Skill	Run	Pieces	Freq.
				Req	Lev	Hours	Fed	
				(min)			(000)	
			t Supervisor to schedule rebuild of MAC					
		valves	removed from the system.					
		* 20 mii	nutes per infeed station.					
INFEED STATION:	12**		condition and wear of infeed stations.	30*	09		220	
ENTIRE SYSTEM			all deficiencies and notify the supervisor for					
		schedu	ling of corrective maintenance.					
		1.	Check feeder paddle mechanical condition					
			for general wear and damage.					
		2.	Check anti-doubler assembly for binding,					
			dragging, damage to vacuum hose, nozzle					
			condition, and general alignment and					
			mechanical condition.					
		3.	Check all presser arm assemblies for					
			general alignment and mechanical condition.					
		4.						
		4.	Check for missing, loose, or damaged belts. Look for discoloration, belt residue, frayed					
			edges, or rubbing. Make minor adjustments					
			as necessary.					
		5.	Check all pulleys and rollers for damage					
			and wear. Wipe clean any accumulation of					
			dust, label adhesive, or debris from the					
			pulleys and rollers.					
		6.	Check that the encoder wheel is contacting					
			the OCR back belt and adjust as necessary.					
		7.	Check all photocells, emitters, and reflectors					
			for loose retaining hardware and bent and/or					
			broken brackets.					
		8.	Check all shock dampers for oil leakage and					
		0	proper mechanical condition and operation.					
			Check for broken or missing springs. Check injector hardware, gantry, injector					
		10.	solenoids, springs, wheels, and pulleys for					
			general wear and mechanical condition.					
		11	Check hinged covers while open, for					
			damaged or leaking pneumatic cylinders.					
			Replace worn or damaged pneumatic					
			cylinders as necessary.					
		12.	Check all clutch/brake sensors for damage					
			or missing hardware/components.					
		* 10 mii	nutes per infeed station.					
			por minous ottationii			i		1

Part or Component	Item	Task Statement and Instruction	Est.	Min.	T	hresholds	3
, ,	No	(Comply with all current safety precautions)	Time	Skill	Run		Freq.
			Req	Lev	Hours	Fed	'
			(min)			(000)	
INFEED STATION:	13**	Clean OCR/FICS module.	18*	07		220	
FICS MODULE		 Using a micro fiber glove or lint free cloth, 					
		clean each AFSM100-Camera System LED					
		array and lens. Do not use the same					
		glove/cloth on the lens that was used to					
		clean the LEDs to reduce the transfer of dirt					
		from the LEDs to the lens.					
		Remove any accumulation of dust or debris					
		from the aperture plate and surrounding					
		area. This includes the removal FICS labels					
		from pulleys, aperture, and baseplate. 3. Remove and vacuum the IPC computer					
		filter.					
		4. Vacuum external surfaces of the Digital I/O,					
		Quint Power Supply, and 8 port Serial					
		Adapter.					
		5. Clean vacuum filter on FICS labeler.					
		Replace filter (NSN 4130-04-000-4688)					
		when impacted dirt and debris cannot be					
		removed by vacuuming.					
		6. Using a micro fiber glove or lint free cloth,					
		wipe down the verifier lens and remove any					
		buildup of dust and debris from in front of					
		the verifier.					
		7. Using a micro fiber glove or lint free cloth,					
		wipe down the IPC Monitor.					
		* 6 minutes per infeed station.					
INFEED STATION:	14	Check TR1 System Components	15*	09		6600	
FICS MODULE		Inspect all cables and wires on the AFSM100					
		Camera System, Encoder, Quint Power Supply,					
		Digital I/O, and 8 port Serial Adapter for:					
		Signs of wear or other external damage					
		Loose or bad connections					
		Document all defective components for repair or					
		replacement.					
		* 5 minutes per infeed station					
INFEED STATION:	15**	* 5 minutes per infeed station. Clean and check FICS labeler.	6*	09			D
FICS MODULE	13	olean and cheek i 100 labelet.	U	UÐ			
. IOO MODULE		WARNING: Exercise care around knife cutting					
		edge to prevent injuries.					
		Clean labeler cutting blades with silicone oil. Charle labeler oil reserveir level and replace.					
		Check labeler oil reservoir level and replace il bottle as possessary					
		oil bottle as necessary.					
		* 2 minutes per infeed station.					

Part or Component	Item	Task Statement and Instruction	Est.	Min.	TI	hresholds	3
. a o. oopoo	No	(Comply with all current safety precautions)	Time	Skill	Run		Freq.
			Req	Lev	Hours	Fed	•
			(min)			(000)	
INFEED STATION: FICS MODULE		Clean and check FICS Ink Jet Printer (IJP). Perform the following steps on the IJP: 1. Remove printhead from sleeve. 2. Clean and check printhead. 3. Clean and check sleeve. 4. Clean back plate. 5. Install printhead back into sleeve. * 10 minutes per infeed station.	30*	09			D
INFEED STATION:		Check and clean FICS labeler.	30*	09			1
FICS MODULE		 WARNING: Exercise care around knife cutting edge to prevent injuries. Place FICS labeler in maintenance position by opening FICS module rear door and rotating labeler latch in a counterclockwise direction. Pull handle on labeler until it is safely latched in the maintenance position. Remove and clean labeler cutting blades. Inspect blades for chips or damage, replace if damage or chips visible. Inspect Delrin balls for wear (flat spots) and replace if worn. Check labeler wick for damage or residue. Replace wick as necessary. Lubricate wick with silicone oil. Inspect stop block bumpers for damage or wear and replace if worn or damaged. Inspect label paddle and stop bumper for wear or damage and replace if damaged or wear is excessive. Clean label application roller using Scrubs in a Bucket towelette. Inspect Label Feed Backup Roller for wear. Replace roller as necessary. Inspect Labeler Back-up Idler (D27) for wear. Replace roller as necessary. Check labeler oil level and replenish as necessary. Return FICS Labeler to the operational position by pulling up on the latch plunger, pushing the Labeler in, rotating Labeler latch in a clockwise direction, and closing the FICS module rear door. 					
		* 10 minutes per infeed station.					
INFEED STATION:	18**	Replace OCR/FICS module IJP filter tube ink	15*	09		137500	
FICS MODULE		filter. Replace IJP filter tube assembly.					
		* 5 minutes per infeed station.					

Part or Component	Itom	Task Statement and Instruction	Est.	Min.		hresholds	, 1
Part of Component	No	(Comply with all current safety precautions)	Time	Skill	Run		Freq.
	INO	(Comply with all current safety precautions)	Req	Lev	Hours	Fed	rieq.
			(min)	Lev	Hours	(000)	
INFEED STATION:	10**	Panisas OCP/EICS modula LIP nrimary ink filter	15*	09		39600	
FICS MODULE	19	Replace OCR/FICS module IJP primary ink filter.	15	09		39000	
FICS MODULE		Replace primary ink filter.					
		* 5 minutes per infeed station.					
LEVEL CHANGE	20**	Clean and check level change module.	2	07		220	
MODULE: LEVEL		 Check door closer wheel for cracks, broken 					
CHANGE		spokes, void in wheel surface.					
MODULE		2. Clean the level change photocell array with					
		a micro fiber glove or lint free cloth.					
LEVEL CHANGE	21**	Clean Microcom label printer.	8*	07		220	
MODULE: LABEL		Vacuum and clean Microcom label printer.		0,		220	
PRINTER		Clean Microcom label printer print head					
TRIITIER		using a Q-tip lightly dampened with					
		isopropyl alcohol or use thermal printer					
		cleaning kit identified in MMO-004-03.					
LEVEL OLIANOE	00**	* 4 minutes per label printer.	4	07			
LEVEL CHANGE	22**	Check condensate trap and filter.	1	07			1
MODULE: LEVEL		Check for oil and/or water presence in condensate					
CHANGE		trap. Drain if water or oil is present. Observe that					
MODULE		filter indicator valve is green; red indicates filter replacement is necessary. Replace filter if red					
TAKEAWAY	23**	indicator is present. Check Takeaway Conveyor Drive	36*	09		19800	
CONVEYOR:	23	From each takeaway conveyor, remove side	30	09		19600	
ENTIRE SYSTEM		access cover.					
LINTING STOTEM		 Check drive belt condition and tension using 					
		procedures and specifications in handbook					
		MS-178. Observe drive motor gearbox for					
		visible lubrication leaks. Tension and track					
		belts when necessary.					
		3. Install side access cover.					
TALCEANALAN	0.4**	* 18 minutes per takeaway conveyor.	00*	07		00000	
TAKEAWAY	24**	Lubricate and check take away conveyor.	20*	07		39600	
CONVEYOR:		Lubricate take away conveyor roller pillow					
TAKEAWAY		block bearings (2 each per side). Lubricate					
CONVEYOR		via grease fittings using lithium base #2					
		grease (Shell Avania or equivalent).					
		Check take away conveyor drive motor gearbox for visible lubrication leaks. Notify					
		supervisor of any lubrication leaks.					
		·					
		* 10 minutes per takeaway conveyor.					

Part or Component	Item	Task Statement and Instruction	Est.	Min.	Т	hresholds	6
	No	(Comply with all current safety precautions)	Time	Skill	Run	Pieces	
			Req	Lev	Hours	Fed	
			(min)			(000)	
SORT MODULE:	25**	Check for damaged components.	30*	09			М
ENTIRE SYSTEM		 Check for cracked buckets, missing bucket 					
		flaps, and buckets not even with adjacent					
		buckets.					
		Check tub full switch assembly/actuator for					
		damage or breakage.					
		Check tub present switch assemblies for damage or breakage.					
		damage of breakage.					
		* 15 minutes per side.					
SORT MODULE:	26	Remove dust and debris.	120	07		19800	
ENTIRE SYSTEM		Vacuum any accumulation of dust and/or debris					
		outside and inside of sort module (maintenance					
DDIVE MODULE.	07**	alley), including the floor. Remove all mail tub labels.	45	07		20000	
DRIVE MODULE: DRIVE		Remove, clean, lubricate, and install the 96-link main drive chain.	45	07		39600	
MOTOR/BRAKE		Refer to MS-178 Section 5.8.5 Removing and					
MOTOR/BRAIL		Replacing the Drive Module 96 Link Drive Chain.					
DRIVE MODULE	28**	Check condition and trip tension for pull cord E-	2	09			М
PULL CORD E-	20	stop.	_	00			101
STOP		Refer to MS-178 Vol. B, Section 4.8.4. Adjust as					
		necessary.					
MAIN MACHINE:	29	Vacuum main electrical cabinet.	2	07		19800	
MAIN		Vacuum any accumulation of dust or debris.					
ELECTRICAL							
CABINET							
INFEED	30	Replace OCR/FICS module IJP Vacuum Filter	6*	09		1540	
STATION: FICS		Inside of the IJP assembly locate, remove, and					
MODULE		replace the vacuum filter.					
		*2 minutes per infeed station					
INFEED STATION:	21**	Close all open doors and covers.	4	07			D
ENTIRE SYSTEM	01	olose all open adols and dovers.	7	01			
MAIN MACHINE:	32**	WARNING: Be cautious when working around or	12	09			D
MAIN		on equipment when power has been applied.					
ELECTRICAL		Return AFSM100 to service.					
CABINET		Restore power to machine as prescribed by the local					
		lockout procedure. Observe the AFSM100 Status					
		Screen on the MIS computer for the following:					
		Machine Status=System Ready, NDSS-Available,					
		USVPC-Connected, REC VCS-Connected, Site VCS-Connected, ORP-Ready, Feeder 1-Ready,					
		Feeder 2-Ready, Feeder 3-Ready, Printer-On-Line,					
		Right and Left Label Printer-Ready, ICS-On, IPC-					
		Ready. Notify supervisor of any problems.					
		productions supervisor or any problems.			<u> </u>		

Part or Component	Item	Task Statement and Instruction	Est.	Min.	TI	hresholds	3
	No	(Comply with all current safety precautions)	Time	Skill	Run	Pieces	Freq.
			Req	Lev	Hours	Fed	
			(min)			(000)	
SUPERVISOR STATION: MIS/USV CONTROL	33**	Perform database repair procedure. CAUTION: Do not interrupt recovery process. Database corruption or data loss could result. 1. Log in as Maintenance 1. 2. Exit AFSM100 software by clicking on System Administration. 3. Click on Exit. Click on Yes. 4. Start Windows NT Explorer by clicking on Start in lower left corner. 5. Click on Programs. 6. Click on NT Explorer. 7. Click on MIS directory box. 8. Click on BIN directory box. 9. Double click on DBRepair.exe. 10. Use dropdown arrow to select database to be repaired or select All Databases to repair all databases. Press Rebuild Database button to start the repair process. 11. After selected databases have been checked, a dialog box displays indicating length of time used to repair databases. 12. Exit DBRepair utility by pressing OK button. 13. Close NT Explorer by clicking on X in upper right hand corner. 14. Click on Start. 15. Click on Start. 15. Click on Restart Computer. 17. Click on Yes. 18. After MIS software is fully functional, switch to the USV-PC screen. 19. Using Start menu, Shutdown and Restart Computer. 20. After USV PC is running, press reset button on the USV rack. 21. Cycle power to all 3 infeed stations. 22. Machine is ready to run.	10	10			1
SUPERVISOR STATION: MIS/USV CONTROL		Check MIS Alarms Observe MIS alarm window for any Photoeye Low Gain Warnings. Clean, align, adjust, or replace any photoeye/reflector to correct the Low Gain Warning(s).	10	09			D
INFEED STATION: FICS MODULE	35**	Check TR1 Camera Optical Path Alignment. Check the optical path alignment of the AFS100-CS camera. Use KB0013803 for the procedure. If the check indicates the camera needs an optical path alignment, perform that procedure per MMO-038-20. Ensure the camera mounting hardware is not loose. * 15 minutes per infeed station.	45*	10		440	
		To minated per inicod station.	<u> </u>	<u> </u>	<u> </u>		

Part or Component	Item	Task Statement and Instruction	Est.	Min.	Т	hresholds	S
	No	(Comply with all current safety precautions)	Time	Skill	Run	Pieces	Freq.
			Req	Lev	Hours	Fed	
			(min)			(000)	
INFEED STATION:	36**	Perform TR1 Camera Dynamic Calibration.	60*	10		440	
FICS MODULE		Perform the AFSM100 CS camera dynamic Perform the AFSM100					
		calibration per KB0013387.					
		Annotate values and adjustments in equipment logbook.					
		*20 minutes per infeed station.					
INFEED STATION:	37**	Check FICS Ink Jet Printer (IJP)	12*	10		1540	
FICS MODULE		Check that IJP vacuum gauge reads hetwoon 13 and 13 inches in vacuum					
		between 12 and 13 inches in vacuum. 2. Check IJP positive air with flow meter for 2.0					
		to 2.5 Standard Cubic Feet per Hour					
		(SCFH).					
		, ,					
INFEED STATION:	20**	* 4 minutes per infeed station. Perform Photoeye Adjustments	45*	09		1540	
ENTIRE SYSTEM	30	Perform Friotoeye Adjustments Perform Feeder, FICS, and 950 Module Photo eye	45	09		1540	
LIVIIKE STOTEW		adjustments per MS-178, Volume B, Section 4.					
		adjustmente per me 17 e, verame 2, eestien 1					
		*15 minutes per infeed station					
INFEED STATION:	39**	Start the machine and each infeed; test each	38	09			М
ENTIRE SYSTEM		interlock switch.					
		Open and close each cover and door, one					
		at a time, and check interlocks.					
		Observe that infeed stops and the carousel					
		continues to run for each infeed interlock switch. Check that all associated lamps and					
		messages on the operator control panel					
		LCD display and Minitron display properly					
		report each interlock switch actuation.					
		3. Observe that the carousel stops when any					
		transport access cover or hood, over height					
		safety hood, and maintenance alley gates					
		are opened. Check that all associated lamps					
		and messages on the operator control panel					
		LCD display and Minitron display properly report each interlock switch actuation.					
		report each interiock switch actuation.					

Part or Component		Task Statement and Instruction	Est.	Min.	Т	hresholds	3
	No	(Comply with all current safety precautions)	Time	Skill	Run		Freq.
			Req	Lev	Hours	Fed	
INJEEED CO.	1611		(min)			(000)	
INFEED STATION:	40**	Check infeed station with Ultra Sound device.	21*	09		1540	
ENTIRE SYSTEM		With the infeed station covers and doors open, start					
		he infeed station. Using an Ultra Sound device and Airborne Probe, listen for the following:					
		Abnormal bearing noise on each deck					
		assembly along the top of the infeed					
		module.					
		2. Abnormal bearing noise on the bottom of					
		each deck plate on the infeed module.					
		3. Abnormal bearing and winding noise					
		emanating from feeder motors.					
		 Vacuum leaking on each MAC valve assembly. 					
		5. Air leaking in the pneumatic system piping					
		and components (i.e. hoses, vacuum tank,					
		canister filter lid, etc.)					
		6. Vacuum pump bearings and vacuum					
		leakage.					
		7. Vacuum turbine motor bearings and vacuum					
		leakage.					
		FICS Labeler pneumatics panel for air leakage.					
		Document all defective components for					
		replacement. Close all covers and doors.					
MAINI MACHUNITA	44**	7 minutes per infeed station.	45	07			N 4
MAIN MACHINE: EMERGENCY	41**	Check carousel and infeed station E-Stops. 1. Start the carousel and each infeed station.	45	07			M
STOPS		 Start the carouser and each infeed station. Actuate E-Stop switch on operator control 					
01010		panel at Infeed Station #1.					
		3. Observe that the carousel and all infeed					
		stations stop.					
		4. Observe that the lamp inside the E-Stop					
		switch illuminates.					
		5. Observe that the control panel E-Stop light					
		illuminates and the LCD display reports an					
		E-Stop. 6. Observe that the sort module Minitron					
		displays the appropriate E-Stop message.					
		7. Observe that red lights on the light stacks					
		illuminate.					
		8. Repeat steps 1-7 for all remaining system					
		E-Stops					
		Document all defective components for					
		repair or replacement.					

MAIN MACHINE:	12**	Chack	infeed station injector and main carousel	105	09	6600	
ENTIRE SYSTEM	72		ension.	105	03	0000	
LIVIII OTOTEW			o MS-178 Volume B Maintenance				
			ation, Section 4 Alignment & Adjustment				
			ures, Injector sub-sections.				
			Place Drive Motor Lockout switch lever in				
			the OFF position and install lockout device.				
			Remove bucket assemblies to provide				
			access for infeed station injector check.				
		2	At the sort module on the left side, starting				
			at the level change unit and working toward				
			the drive module:				
			a. Remove six bucket modules.				
			b. Skip six bucket modules.				
			c. Remove six more bucket modules.				
			d. Skip six bucket modules.				
			e. Remove six bucket modules.				
		3.	Remove lockout device and place Drive				
			Motor Lockout switch lever in the ON				
			position after bucket assemblies have been				
			removed.				
		4.	Position carousel chain. Run carousel				
			until spaces from missing bucket				
			assemblies are under the three infeed				
			station injector modules. Press E-Stop				
			switch when spaces from missing bucket				
			assemblies are under the three infeed				
			injection modules.				
		5.	Perform system shutdown. Shut down				
			system using MS-178 Vol B Shutdown and				
			Lockout Procedures.				
		6.	Lock out power. Power down the machine				
			and lock out electrical power and				
			compressed air as prescribed by the current				
			local lockout instructions providing				
		_	lockout/restore procedures.				
		7.					
			module.				
		8.	Check the GIO tachometer belt for				
			damage. Check for debris on the pulleys.				
		CAUTI	ON: If carousel chain tension is not within				
		specif	cation and adjustment is performed,				
		initiate	action to check alignment of level change				
			nfeed station proximity switches. Use				
			lures and specifications published in				
		handb	ook MS-178.				
		9.	Check and adjust, if necessary, main				
			carousel chain tension. Using procedures				
		1	and specifications published in handbook				
		1	MS-178, check main carousel chain tension.				
		10	Check the main drive motor gearbox for				
			visible lubricant leaks. Notify supervisor of				
			lubricant leaks.				
		11	Check main drive motor brake. Check				
			main drive motor brake solenoid air gap and				
•			V 1 * 1				

Part or Component			Task	< State	ment an	d Instructi	on	Est.	Min.	TI	hresholds	3
	No	(Co	omply w	ith all o	current s	afety pred	cautions)	Time	Skill	Run	Pieces	Freq.
								Req	Lev	Hours	Fed	
								(min)			(000)	
							cedures and					
						book MS-						
		12.	Check	infeed	l station	. (5 min p	er IFS)					
			a.	Inject	or area,	check for	wear and					
				debris								
			b.				plates, and					
						embly for	wear and					
				dama	_							
		13.					removed					
					top cov	ers on ter	nsion					
			module	€.								
		WARNI	NG: Be	cautio	ous whe	n workin	g around or					
						as been						
		14	Return	to ser	vice Re	estore pov	wer to					
		1-7.				•	ocal lockout					
							100 Status					
			•			mputer fo						
							tem Ready,					
							ected, REC					
						VCS-Con						
							Feeder 2-					
							r-On-Line,					
							ady, ICS-On,					
						ervisor of						
			probler				•					
		15.	Start c	arouse	el and p	osition ca	arousel					
							le in sort					
			module	e. Pres	s E-Stop	switch w	hen all					
			missing	g bucke	et assem	bly space	es are visible					
						t modules						
		16.					vitch lever in					
				•			kout device.					
							noved earlier.					
		18.					lace Drive					
						lever in th						
			•			et assemb	olies have					
			been in	stalled								

MAIN MACHINE:	43**	Replac	e chain guide Teflon strips.	263	09	39600
ENTIRE SYSTEM			Remove 12 consecutive bucket			
			assemblies. Place Drive Motor Lockout			
			switch lever in the OFF position and install			
			lockout device. On the right side of the sort			
			module, remove 12 consecutive bucket			
			assemblies starting at the safety hood and			
			working toward the level change unit.			
			Remove lockout device and place Drive			
			Motor Lockout switch lever in the ON			
			position after bucket assemblies have been			
			removed.			
		2.	Position carousel chain. Run carousel and			
			press E-Stop switch when space from			
			missing bucket assemblies are at the left			
			side level change. This will enable an			
			unobstructed view of the left side level			
			change Teflon wear strips later in the PM.			
			Perform this step for the tension module,			
			right side level change, and drive module			
			Teflon strip replacement also.			
		3.	Perform system shutdown. Shut down			
			system using MS-178 Vol B Shutdown and			
			Lockout Procedures.			
		4.	Lock out power. Power down the machine			
		••	and lock out electrical power and			
			compressed air as prescribed by the current			
			local lockout instructions providing			
			lockout/restore procedures.			
		5	Replace left side level change module			
		0.	Teflon strips.			
			a. Remove two side covers on level			
			change module.			
			b. Remove the top 6 carrier brackets			
			to expose the top left level change			
			chain guide Teflon strip.			
			c. Replace top level change Teflon			
			strip NSN 3915-05-000-2308.			
			d. Reinstall every other carrier bracket			
			removed in step 5 b.			
			e. Remove the lower 6 carrier			
			brackets to expose the lower left			
			level change chain guide Teflon			
			strip.			
			f. Replace lower level change Teflon			
			strip NSN 3915-05-000-2308.			
			removed in step 5 e			
			h. Reinstall two left level change side			
			covers			
			i. Remove the four top tension module			
		e	COVERS.			
		6.	Return to service. Restore power to			
			machine as prescribed by the local lockout			
			procedure. Restore power to machine as			
			prescribed by the local lockout procedure.			

Observe the AFSM100 Status Screen on the MIS computer for the following:
Machine Status=System Ready, NDSS-Available, USVPC-Connected, REC VCS-Connected, Site VCS-Connected, ORP-Ready, Feeder 1-Ready, Feeder 2-Ready, Feeder 3-Ready, Printer-On-Line, Right and Left Label Printer-Ready, ICS-On, IPC-Ready. Notify supervisor of any problems. Notify supervisor of any problems.

- 7. Position Carousel. Run carousel and press E-Stop switch when space from missing bucket assemblies are at the tension module. This will enable an unobstructed view of the tension module Teflon wear strip
- 8. **Perform system shutdown.** Shut down system using MS-178 Vol B Shutdown and Lockout Procedures.
- Lock out power. Power down the machine and lock out electrical power and compressed air as prescribed by the current local lockout instructions providing lockout/restore procedures.
- 10. Remove the lower tension module guide rail.
- 11. Replace tension module Teflon chain guide strip.
 - Remove carrier brackets to expose the tension module Teflon chain quide strip.
 - Replace tension module Teflon chain guide strip NSN 3915-05-000-2312.
 - c. Reinstall carrier brackets removed in step 11a.
 - d. Reinstall lower tension module guide rail.
 - e. Reinstall the top Tension Module covers.
- 12. Remove two right side level change side covers.
- 13. **Return to service.** Restore power to machine as prescribed by the local lockout procedure. Observe the AFSM100 Status Screen on the MIS computer for the following: Machine Status=System Ready, NDSS-Available, USVPC-Connected, REC VCS-Connected, Site VCS-Connected, ORP-Ready, Feeder 1-Ready, Feeder 2-Ready, Feeder 3-Ready, Printer-On-Line, Right and Left Label Printer-Ready, ICS-On, IPC-Ready. Notify supervisor of any problems.
- 14. **Position carousel**. Run carousel and press E-Stop switch when space from missing bucket assemblies are at the right side level

- change module. This will enable an unobstructed view of the the right side level change module Teflon wear strips
- 15. **Perform system shutdown.** Shut down system using MS-178 Vol B Shutdown and Lockout Procedures.
- 16. Lock out power. Power down the machine and lock out electrical power and compressed air as prescribed by the current local lockout instructions providing lockout/restore procedures.
- 17. Replace right side level change module Teflon strips.
 - Remove the top carrier brackets to expose the top right level change chain guide Teflon strip.
 - b. Replace top level change Teflon strip NSN 3915-05-000-2308.
 - c. Reinstall carrier brackets removed in step 17a.
 - Remove the lower carrier brackets to expose the lower right level change chain guide Teflon strip.
 - e. Replace lower level change Teflon strip NSN 3915-05-000-2308.
 - Reinstall carrier brackets removed in step 17d.
 - g. Reinstall two right level change side covers
 - h. Remove the two end drive module covers.
- 18. Return to service. Restore power to machine as prescribed by the local lockout procedure. Observe the AFSM100 Status Screen on the MIS computer for the following: Machine Status=System Ready, NDSS-Available, USVPC-Connected, REC VCS-Connected, Site VCS-Connected, ORP-Ready, Feeder 1-Ready, Feeder 2-Ready, Feeder 3-Ready, Printer-On-Line, Right and Left Label Printer-Ready, ICS-On, IPC-Ready. Notify supervisor of any problems.
- 19. Position carousel. Run carousel and press E-Stop switch when space from missing bucket assemblies are at the drive module. This will enable an unobstructed view of the drive module Teflon wear strip
- 20. **Perform system shutdown.** Shut down system using MS-178 Vol B Shutdown and Lockout Procedures.
- 21. Lock out power. Power down the machine and lock out electrical power and compressed air as prescribed by the current local lockout instructions providing lockout/restore procedures.

Part or Component	Item	Task Statement and Instruction	Est.	Min.	TI	hresholds	5
	No	(Comply with all current safety precautions)	Time	Skill	Run		Freq.
			Req	Lev	Hours	Fed	
		00 B	(min)			(000)	
		22. Remove the lower drive module guide					
		rail.					
		23. Replace drive module Teflon chain guide					
		strip. a. Remove carrier brackets to expose					
		the drive module Teflon chain guide					
		strip.					
		b. Replace drive module Teflon chain					
		guide strip NSN 3915-05-000-2312.					
		c. Reinstall all carrier brackets.					
		d. Reinstall lower drive module guide					
		rail.					
		 e. Reinstall the two end drive module covers. 					
		24. Return to service. Restore power to					
		machine as prescribed by the local lockout					
		procedure. Observe the AFSM100 Status					
		Screen on the MIS computer for the					
		following: Machine Status=System Ready,					
		NDSS-Available, USVPC-Connected, REC					
		VCS-Connected, Site VCS-Connected,					
		ORP-Ready, Feeder 1-Ready, Feeder 2-					
		Ready, Feeder 3-Ready, Printer-On-Line,					
		Right and Left Label Printer-Ready, ICS-On, IPC-Ready. Notify supervisor of any					
		problems.					
		25. Position Carousel . Run carousel and press					
		E-Stop switch when space from missing					
		bucket assemblies are along the left side					
		sort modules. This will enable the bucket					
		assemblies to be replaced.					
		26. Replace 12 consecutive bucket					
		assemblies. Place Drive Motor Lockout					
		switch lever in the OFF position and install					
		lockout device. On the left side of the sort					
		module, install the 12 consecutive bucket					
		assemblies removed in step 1. Remove					
		lockout device and place Drive Motor					
		Lockout switch lever in the ON position after					
		bucket assemblies have been installed.					
		 Check operation. Run the carousel and observe smooth transition of bucket/carrier 					
		bracket assemblies as they transition					
		between level change, tension and drive					
		module areas.					
		module areas.					<u> </u>

Part or Component	Item	Task Statement and Instruction	Est.	Min.	Thresholds			
,	No	(Comply with all current safety precautions)	Time	Skill	Run		Freq.	
			Req	Lev	Hours	Fed		
			(min)			(000)		
MAIN MACHINE:	44**	Observe the sort module alignment.	10	07		39600		
SORT MODULE		Start the carousel and observe bucket travel.						
		Buckets should travel smoothly and not bounce.						
		Notate bucket number of any individual bucket that						
		does not travel smoothly or bounces. Notate module						
		transition locations where bucket bouncing occurs.						
		Notify supervisor of notations.						
MAIN MACHINE:	45**	Observe carrier bracket alignment.	6	09		39600		
CARRIER		Start the carousel, enter the maintenance alley, and						
BRACKET AND		observe the alignment of carrier brackets. All carrier						
CHAIN ASSEMBLY		bracket wheels should make contact with the rail.						
		Adjust or replace carrier brackets that are not						
		properly aligned or defective.						
SORT MODULE:	46**	Check operation of carousel safety hoods, drive	5	09			M	
ENTIRE SYSTEM		module brake, & torque limiter.						
		 Ensure there is no mail in carrier buckets. 						
		Insert a pliable piece of cardboard in a						
		carrier bucket at chute #30. The cardboard						
		should stick up above the top of the bucket						
		sufficiently to actuate the safety hood at the						
		entry to the drive module.						
		With safety hood in normal operating						
		position, make two marks on safety hood						
		drawer slide assembly: one mark 8" and						
		another mark 11" from the frame to						
		establish acceptable travel distance limits of						
		the safety hood.						
		Start carousel. When cardboard strikes						
		safety hood, observe that the carousel						
		stops. The cardboard should move the						
		safety hood between 8" and 11".						
		Insert a pliable piece of cardboard in a						
		carrier bucket at chute #90.						
		6. Repeat items 3 and 4 for the level change						
		module safety hood.						
		If carousel does not stop within prescribed limits, or						
		if excessive backlash is observed, initiate action to						
		check main drive brake and torque-limiter adjustments.						
MAIN MACHINE:	47**	adjustments. Check Infeed Station and Main Electrical Cabinet	10	09		1540	\vdash	
ENTIRE SYSTEM	4/	with thermal imaging device.	10	US		1340		
LINTING STOTEIN		Open the infeed station electrical panel doors and						
		the main electrical cabinet door.						
		Scan the infeed station electrical panels						
		(breaker panel and CCT board panel) for						
		abnormal hot spots.						
		Scan the Main Electrical Cabinet panel for						
		abnormal hot spots.						
		3. Close all open panel doors.						
	l	o. Globo dii opoli parioi doolo.			l l			

Part or Component	Item	Task Statement and Instruction	Est.	Min.	Т	hresholds	S
	No	(Comply with all current safety precautions)	Time	Skill	Run	Pieces	Freq.
			Req	Lev	Hours	Fed	
			(min)			(000)	
MAIN MACHINE:	48**	Run Daily Test Deck.	24	09			D
ENTIRE SYSTEM		Alternate between the MTSCEVEN and					
		MTSCODD sortplans daily.					
		Set up the AFSM100 to run the daily test					
		deck using the MTSCEVEN or MTSCODD					
		sortplan. Put the machine in BCR/OCR					
		mode. 2. Load each 22 piece grouping on all three					
		infeed stations and start the run.					
		Observe pick-off and vacuum gauge during					
		the destacking of the mail. Open the feeder					
		back door and observe that the vacuum					
		gauge needle does not fluctuate more than					
		5 units as each mailpiece is fed. Verify that					
		the vacuum recovers to high vacuum as					
		each mailpiece is picked off. Close the					
		feeder back door.					
		4. Perform an End of Run.					
		5. Collect test deck pieces from mail tubs.					
		6. Review FICS labels placement on template					
		pieces for proper placement and remove					
		FICS labels (approximately 33 labels to be removed).					
		7. Any piece failures should be noted and a					
		work order generated for					
		troubleshooting/corrective maintenance					
		action.					
INFEED STATION:	49**	Run Feeder Performance Test Deck.	75*	09		1540	
FEEDER MODULE		Get ready to run the 9-group performance deck by	-				
		setting up test at MIS computer using sort program					
		MTSCSG. Test each infeed station using					
		performance deck provided with FEDR modification					
		and print report. Generate a					
		troubleshooting/corrective maintenance work order					
		for stress groups not in tolerance.					
		* 25 minutes per infeed station.					
FINAL-CLEANUP	50**	Clean up.	5	All			
		Ensure all tools, lubricants, rags, etc., are removed					
		from the work area. Annotate deficiencies found and					
		repairs performed in the Maintenance logbook.					
		Notify supervisor and/or generate work orders per					
		local SOP to document/initiate corrective					
		maintenance activity for deficiencies found.			<u> </u>		

^{*} 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

AFSM100 (ATHS) TR 1 MASTER CHECKLIST

03-AFSM100-AG-002-M

PREVENTIVE MAINTENANCE (PM)

Time Total: (1432) minutes

U.S. Posta	l Servic	e							IDE	NTIFICA	TION				
Maintenance	Cher	rkliet	WOR					MENT				CLASS	NU	JMBER	TYPE
Mantenance	, One	ZIMIOL	COD 0	3 A	\ F	s	ACRO M		0	0	A	CODE	0	0 2	М
Equipment No Automated Flats \$ 100	Sorting		<u> </u>	Ec	vijuipmen SM100	t Mod	lel	•		Bulleti	n Filena 120136	ime		Occurren eCBM	ce
Part or Component	Item	Т	ask S	Staten	nent a	nd In	struc	ction			Est.	Min.	Т	hreshol	ds
, and on John porton	No		(Comply with all current safety precautions)										Run Hours	Pieces Fed (000)	
SAFETY STATEMENT	1**	COMPLY M Disconnect by this instru procedures machine. C debris. If ar supervisor p on the equip THE USE O PROHIBITE When clean method such a damp rag blown air. A optical equip methods can to your supe WARNING this bulletir Work Plan (PPE). Refe appropriate requiremen WARNING: Data Sheet: performance Ensure the on file and reordering current SDS appropriate	power power to provide the comment of the comment o	r and Reforerly for su usual p proces MPR requia HEP be use ree cl t only pe use r imm EWP/ requi P PPE ous p she pi ent SI a proces reque	apply er to co shut of shut of shut of shut of spicion substate edin ed. Refer ed. Ref	locker lo	outs nt loo n and ust o n is fo h and reference servate servate reference servate servate reference se	when cal lock or unu und, iy furth own cle complete aning ety de letect ontain Elect ontain e ing Sturing oduces. We geste SDS	reckooursus not neer I Al earres I ficion neer us I ficion need trice I fulle t u I fice I for the ed is for the e	equired but this all tify action IR IS ning ner or sed on sed on sed in cal pment ety he etin. sed is en that or		All		(000)	

Part or Component	Item	Task Statement and Instruction	Est.	Min.	T	hreshold	
	No	(Comply with all current safety precautions)	Time Req (min)	Skill Lev	Run Hours	Pieces Fed (000)	Freq.
MAIN MACHINE: MIS/USV CONTROL		Perform system shutdown. Shut down system using MS-178 Vol B Shutdown and Lockout Procedures.	5	09			D
MAIN MACHINE: MAIN ELECTRICAL CABINET	3**	Lock out power. Lockout machine according to current local Energy Control Procedures.	5	All			D
MIS/USV SYSTEM: ENTIRE SYSTEM	4**	Remove and clean filters. Replace filters when impacted dirt and debris can not be removed by vacuuming. 1. Clean filter in each rear door of the supervisor station. 2. Clean filter each computer (MIS and USV). 3. Reinstall all filters.	5	07			1
MAIN MACHINE: ENTIRE SYSTEM	5**	Mail search the entire AFSM100 System by performing the following steps: 1. Perform mail search beginning at infeed station 1 by opening all hinged covers and doors on each infeed station, perform mail search and leave covers open. 2. Continue to the right side of the level change module by bin 1. Check for mail on perforated screen underneath bucket assemblies and on the floor. 3. Continue to the right side of the sort modules and perform a mail search beginning at bin 1, working toward the drive module. a. Remove any debris found on conveyor and/or conveyor photocells. b. Search for mail in mail chutes. 4. Continue to the Drive Module and search for mail on expanded metal guards under drive module at the entrance to the maintenance alley. 5. Continue on the left side of the sort modules and perform a mail search beginning at bin 61, working toward the level change module. a. Remove any debris found on conveyor and/or conveyor photocells. b. Search for mail in mail chutes. 6. Continue to the left side of the level change module by bin 120. Check for mail on perforated screen underneath bucket assemblies and on the floor. 7. Continue to the injector side of the infeed stations and check for mail on the floor underneath the injectors.		07			D

Part or Component	Item	Task Statement and Instruction	Est.	Min.	Т	hreshold	ds
·	No	(Comply with all current safety precautions)	Time		Run	Pieces	Freq.
			Req	Lev	Hours	Fed	
INCEED OTATION	044		(min)	07		(000)	
INFEED STATION: ENTIRE SYSTEM	6**	Remove debris. 1. Remove any buildup of debris from the Destacker central vacuum chamber screen. 2. Remove visible debris such as loose FICS labels and mail piece fragments. *3 minutes per feeder	9*	07		25	
INFEED STATION:	7**	Remove dust and debris.	9*	07		220	
FEEDER MODULE	,	Vacuum and clean any accumulation of dust or debris from the mail transport in the feeder, OCR/ICS, and 950 modules.	9	07		220	
		* 3 minutes per infeed station.					
INFEED STATION: FEEDER MODULE		Clean destacker module. 1. Brush and vacuum the destacker low vacuum chamber plate. Replace the vacuum plate (NSN 3915-05-000-2458) when impacted debris can not be removed by vacuuming. 2. Remove and clean the interior filter screen. Replace the interior filter (NSN 4330-05-000-2273) when impacted debris can not be removed by vacuuming. 3. Remove canister filter and clean by vacuuming. Replace the canister filter (NSN 4330-05-000-2274) when impacted dirt and debris can not be removed by vacuuming. * 4 minutes per infeed station.	12*	07		220	
INFEED STATION: FEEDER MODULE	9**	Check and clean feeder vacuum filters. Clean destacker/tilter module vacuum filter. Replace filter when impacted dirt and debris can not be removed by vacuuming. 1. Remove the filter element from the vacuum pump and clean by vacuuming with a HEPA vacuum. 2. Reinstall vacuum pump filter. * 2 minutes per infeed station.	6*	07		1540	
INFEED STATION:	10**	Replace vacuum pump carbon vanes.	30*	07		13200	
FEEDER MODULE		 Remove vacuum pump plastic front cover. Remove vacuum pump regulator. Remove cast iron front cover. Remove and replace all six carbon vanes NSN 3455-05-000-7867. Install the cast iron front cover. Install the vacuum pump regulator. Install the vacuum pump plastic cover. * 10 minutes per infeed station.					

Part or Component	Item	Task Statement and Instruction	Est.	Min.	Т	hreshold	ds
·	No	(Comply with all current safety precautions)	Time		Run	Pieces	Freq.
			Req	Lev	Hours		
INICCOD OTATION	11**	Denless the veryone eveters MAC Velves	(min)	00		(000)	
INFEED STATION: FEEDER MODULE	11**	Replace the vacuum system MAC Valves.	60*	09		13200	
FEEDER MODULE		Remove and replace MAC valves.					
		Contact Supervisor to schedule rebuild of MAC					
		valves removed from the system.					
		* 20 minutes per infeed station.					
INFEED STATION:	12**	Check condition and wear of infeed stations.	30*	09		220	
ENTIRE SYSTEM		Notate all deficiencies and notify the supervisor for					
		scheduling of corrective maintenance.					
		Check feeder paddle mechanical condition					
		for general wear and damage. 2. Check anti-doubler assembly for binding,					
		dragging, damage to vacuum hose, nozzle					
		condition, and general alignment and					
		mechanical condition.					
		Check all presser arm assemblies for					
		general alignment/tension and mechanical condition.					
		4. Check for missing, loose, or damaged belts.					
		Look for discoloration, belt residue, frayed					
		edges, or rubbing. Make minor adjustments					
ļ		as necessary.					
		5. Check all pulleys and rollers for damage					
		and wear. Wipe clean any accumulation of					
		dust, label adhesive, or debris from the pulleys and rollers.					
		6. Check that the encoder wheel is contacting					
		the OCR back belt and adjust as necessary.					
		7. Check all photocells, emitters, and reflectors					
		for loose retaining hardware and bent and/or					
		broken brackets. 8. Check all shock dampers for oil leakage and					
		proper mechanical condition and operation.					
		Check for broken or missing springs.					
		10. Check injector hardware, gantry, injector					
		solenoids, springs, wheels, and pulleys for					
		general wear and mechanical condition.					
		 Check hinged covers while open, for damaged or leaking pneumatic cylinders. 					
		Replace worn or damaged pneumatic					
		cylinders as necessary.					
		12. Check all clutch/brake sensors for damage					
		or missing hardware/components.					
		* 10 minutes per infeed station.					

Part or Component	Item	Task Statement and Instruction	Est.	Min.	Т	hreshold	ds
·	No	(Comply with all current safety precautions)	Time		Run	Pieces	Freq.
			Req	Lev	Hours	Fed	
			(min)			(000)	
INFEED STATION:	13**	Clean OCR/FICS module.	18*	07		220	
FICS MODULE		Using a micro fiber glove or lint free cloth, sloan apply A FSM100 Company System LED.					
		clean each AFSM100-Camera System LED array and lens. Do not use the same					
		glove/cloth on the lens that was used to					
		clean the LEDs to reduce the transfer of dirt					
		from the LEDs to the lens.					
		2. Remove any accumulation of dust or debris					
		from the aperture plate and surrounding					
		area. This includes the removal FICS labels					
		from pulleys, aperture, and baseplate.					
		Remove and vacuum the IPC computer filter.					
		Vacuum external surfaces of the Digital I/O,					
		Quint Power Supply, and 8 port Serial					
		Adapter.					
		Clean vacuum filter on FICS labeler.					
		Replace filter (NSN 4130-04-000-4688)					
		when impacted dirt and debris cannot be					
		removed by vacuuming. 6. Using a micro fiber glove or lint free cloth,					
		wipe down the verifier lens and remove any					
		buildup of dust and debris from in front of					
		the verifier.					
		Using a micro fiber glove or lint free cloth,					
		wipe down the IPC Monitor.					
		* 6 minutes per infeed station.					
INFEED STATION:	14	Check TR1 System Components	15*	09		6600	
FICS MODULE		Inspect all cables and wires on the AFSM100					
		Camera System, Encoder, Quint Power Supply,					
		Digital I/O, and 8 port Serial Adapter for: Signs of wear or other external damage					
		Loose or bad connections					
		Document all defective components for repair or					
		replacement.					
		* 5 minutes per infeed station.					
INFEED STATION:	15**	Clean and check FICS labeler.	6*	09			D
FICS MODULE		WARNING: Exercise care around knife cutting					
		edge to prevent injuries.					
		 Clean labeler cutting blades with silicone oil. Check labeler oil reservoir level and replace 					
		oil bottle as necessary.					
		·					
		* 2 minutes per infeed station.					

Part or Component	Item	Task Statement and Instruction	Est.	Min.	Т	hreshold	ds
	No	(Comply with all current safety precautions)	Time		Run	Pieces	Freq.
			Req	Lev	Hours	Fed	
INJESED OTATION	1044		(min)			(000)	
INFEED STATION: FICS MODULE		Clean and check FICS Ink Jet Printer (IJP). Perform the following steps on the IJP: 1. Remove printhead from sleeve. 2. Clean and check printhead. 3. Clean and check sleeve. 4. Clean back plate. 5. Install printhead back into sleeve.	30*	09			D
		* 10 minutes per infeed station.					
INFEED STATION: FICS MODULE		Check and clean FICS labeler.	30*	09			1
TIOO WODOLL		WARNING: Exercise care around knife cutting edge to prevent injuries.					
		 Place FICS labeler in maintenance position by opening FICS module rear door and rotating labeler latch in a counterclockwise direction. Pull handle on labeler until it is safely latched in the maintenance position. Remove and clean labeler cutting blades. Inspect blades for chips or damage, replace if damage or chips visible. Inspect Delrin balls for wear (flat spots) and replace if worn. Check labeler wick for damage or residue. Replace wick as necessary. Lubricate wick with silicone oil. Inspect stop block bumpers for damage or wear and replace if worn or damaged. Inspect label paddle and stop bumper for wear or damage and replace if damaged or wear is excessive. Clean label application roller using Scrubs in a Bucket towelette. Inspect Label Feed Backup Roller for wear. Replace roller as necessary. Inspect Labeler Back-up Idler (D27) for wear. Replace roller as necessary. Check labeler oil level and replenish as necessary. Return FICS Labeler to the operational position by pulling up on the latch plunger, pushing the Labeler in, rotating Labeler latch in a clockwise direction, and closing the FICS module rear door. * 10 minutes per infeed station. 					
INFEED STATION:	18**	Replace OCR/FICS module IJP filter tube ink	6*	09		1540	
FICS MODULE		filter. Replace IJP filter tube assembly.					
		* 2 minutes per infeed station.					

Part or Component	Item	Task Statement and Instruction	Est.	Min.	T	hreshold	ds
	No	(Comply with all current safety precautions)	Time	Skill	Run	Pieces	Freq.
			Req	Lev	Hours	Fed	
			(min)			(000)	
INFEED STATION:		Replace OCR/FICS module IJP primary ink filter.	15*	09		39600	
FICS MODULE		Replace primary ink filter.					
		* 5 minutes per infeed station.					
LEVEL CHANGE	20**	Clean and check level change module.	2	07		220	
MODULE: LEVEL		 Check door closer wheel for cracks, broken 					
CHANGE MODULE		spokes, void in wheel surface					
		Clean the level change photocell array with					
		a micro fiber glove or lint free cloth.					
LEVEL CHANGE	21**	Check condensate trap and filter.	1	07			1
MODULE: LEVEL		Check for oil and/or water presence in condensate					
CHANGE MODULE		trap. Drain if water or oil is present. Observe that					
		filter indicator valve is green; red indicates filter					
		replacement is necessary. Replace filter if red					
		indicator is present.					

Part or Component	Itom	Task Statement and Instruction	Est.	Min.	Г -	hreshold	10
Part of Component	Item No	(Comply with all current safety precautions)	Time		Run	Pieces	
	110	(Comply with all current salety precautions)	Req	Lev	Hours	Fed	i ieq.
			(min)		liouis	(000)	
ATHS: ENTIRE	22**	Check and clean ATHS.	30*	09		220	
SYSTEM		Notate any deficiencies found during the following	00	00			
0.0.1		steps and contact a supervisor if any of the belts					
		require replacement.					
		Check accumulation conveyor belts for					
		wear, improper tracking, and damage. Clean					
		all accumulation conveyor photocells using					
		a micro fiber glove or lint free cloth.					
		Check incline conveyor belts for wear,					
		improper tracking, and damage. Clean all					
		incline conveyor photocells using a micro					
		fiber glove or lint free cloth.					
		Check automatic tray destacker belts for					
		wear or damage. Clean all destacker					
		photocells using a micro fiber glove or lint free cloth.					
		4. Check automatic tray destacker puller					
		springs for wear and/or over stretching.					
		Replace springs as necessary.					
		Check transfer module conveyor belts for					
		wear, improper tracking, and damage.					
		Ensure that the tabs on the transfer belts					
		are adjusted properly so that empty tubs are					
		square when transferred to the print/apply					
		module. Clean all transfer module conveyor					
		photocells using a micro fiber glove or lint					
		free cloth.					
		Clean the transfer module camera lens					
		using a micro fiber glove or lint free cloth.					
		7. Clean the SICK scanner lenses using a					
		micro fiber glove or lint free cloth. 8. Check the lift/rotate assembly belts and lift					
		assembly for wear or damage.					
		9. Check all insert/extract modules for missing					
		or damaged round belts.					
		Check discharge conveyor for missing or					
		damaged round belts.					
ATHS: ATHS	23	* 15 minutes per side. Clean ATHS insert/extract module outer guard	20*	07			1
INSERT/EXTRACT	23	rail.	20	UI			'
MODULE		Use Scrubs in a Bucket to remove build-up of					
MODULE		gummy adhesive residue. Dispose of cloth when it					
		becomes soiled.					
	<u>l</u>	* 10 minutes per side.					

Part or Component	Item	Task Statement and Instruction	Est.	Min.	Т	hreshold	ds
	No	(Comply with all current safety precautions)	Time		Run	Pieces	Freq.
			Req	Lev	Hours	Fed	
A T. I.O. A T. I.O.	0.4**	lot I ATUO I I I	(min)			(000)	
ATHS: ATHS PRINT/APPLY MODULE		 Check and clean ATHS labeler and printer. Check labeler air filter condition. Replace filter if dirty or clogged. Check labeler brush for wear or damage. Replace brush as necessary. Remove air line from printer. Confirm that no air pressure registers on pressure gauge. Open label lid. Rotate head release arm until latch releases. Unlatch label hold down by depressing thumb latch. Remove backing paper in stock path. Release brass nip roller hold-down. Clean nip roller, label pressure rollers, actuator roller, paper end switch, and platen. Use soft, lint free cloth and Scrubs in a Bucket to remove any build up of adhesive residue. Dispose of cloth when it becomes soiled. Replace backing paper in stock path. Re-install air line to printer. Close and latch label hold-down and head release arm. Close label lid. * 10 minutes per side. 	20*	09			D
SORT MODULE: ENTIRE SYST EM SORT MODULE: ENTIRE SYSTEM		Check for damaged components. 1. Check for cracked buckets, missing bucket flaps, and buckets not even with adjacent buckets. 2. Check tub full photoeye for scratched and/or cracked lens 3. Check tub present photoeye for scratched and/or cracked lens. * 15 minutes per side. Remove dust and debris. Vacuum any accumulation of dust and/or debris outside and inside of sorter module (maintenance)	30* 120	07		19800	M
DRIVE MODULE:	27**	alley), including floor. Remove all buildup of ATHS tray labels from insert/extract modules. Remove, clean, lubricate, and install the 96-link	45	07		39600	
DRIVE MOTOR/BRAKE		main drive chain. Refer to MS-178 Section 5.8.5 Removing and Replacing the Drive Module 96 Link Drive Chain.					
DRIVE MODULE PULL CORD E- STOP	28**	Check condition and trip tension for pull cord Estop. Refer to MS-178 Vol. B, Section 4.8.4. Adjust as necessary.	2	9			M

Part or Component	Item	Task Statement and Instruction	Est.	Min.	Т	hreshold	ds
· ·	No	(Comply with all current safety precautions)	Time	Skill	Run	Pieces	Freq.
			Req	Lev	Hours		
			(min)			(000)	
MAIN MACHINE:	29	Vacuum main electrical cabinet.	2	07		19800	
MAIN ELECTRICAL		Vacuum any accumulation of dust or debris.					
CABINET							
MAIN MACHINE:	30**	Close all open doors and covers.	4	07			D
ENTIRE SYSTEM							
MAIN MACHINE:		WARNING: Be cautious when working around or	12	09			D
MAIN ELECTRICAL		on equipment when power has been applied.					
CABINET		Return AFSM100 to service.					
		Restore power to machine as prescribed by the local					
		lockout procedure. Observe the AFSM100 Status					
		Screen on the MIS computer for the following:					
		Machine Status=System Ready, NDSS-Available,					
		USVPC-Connected, REC VCS-Connected, Site					
		VCS-Connected, ORP-Ready, Feeder 1-Ready,					
		Feeder 2-Ready, Feeder 3-Ready, Printer-On-Line,					
		Right and Left Label Printer-Ready, ICS-On, IPC-					
		Ready, ATHS-Automatic. Notify supervisor of any					
		problems.					

Part or Component	Item	Task Statement and Instruction	Est.	Min.	Т	hreshold	ds
'	No	(Comply with all current safety precautions)	Time	Skill	Run	Pieces	Freq.
			Req	Lev	Hours	Fed	·
			(min)			(000)	
SUPERVISOR	32**	Perform database repair procedure.	10	10		,	1
STATION: MIS/USV		CAUTION: Do not interrupt recovery process.					
CONTROL		Database corruption or data loss could result.					
		Log in as Maintenance 1.					
		Exit AFSM100 software by clicking on					
		System Administration.					
		Click on Exit. Click on Yes.					
		Start Windows NT Explorer by clicking on					
		Start in lower left corner.					
		5. Click on Programs.					
		6. Click on NT Explorer.					
		7. Click on MIS directory box.					
		8. Click on BIN directory box.					
		Double click on DBRepair.exe.					
		10. Use dropdown arrow to select database to					
		be repaired or select All Databases to repair					
		all databases. Press Rebuild Database					
		button to start the repair process. 11. After selected databases have been					
		checked, a dialog box displays indicating					
		length of time used to repair databases.					
		12. Exit DBRepair utility by pressing OK button.					
		13. Close NT Explorer by clicking on X in upper					
		right hand corner.					
		14. Click on Start.					
		15. Click on Shutdown.					
		16. Click on Restart Computer.					
		17. Click on Yes.					
		18. After MIS software is fully functional, switch					
		to the USV-PC screen.					
		19. Using Start menu, Shutdown and Restart					
		Computer.					
		20. After USV PC is running, press reset button					
		on the USV rack.					
		21. Cycle power to all 3 infeed stations.					
		22. Machine is ready to run.					
SUPERVISOR		Check MIS Alarms	10	09		Ī	D
STATION: MIS/USV		Observe MIS alarm window for:					
CONTROL		Photoeye Low Gain Warnings.					
		a. Clean, align, adjust, or replace any					
		photoeye/reflector to correct the					
		Low Gain Warning(s).					
		ATHS PLC or Servo Low Battery Alarms.					
		a. Replace low batteries.					

Part or Component	Item	Task Statement and Instruction	Est.	Min.	Т	hreshold	ds
	No	(Comply with all current safety precautions)	Time		Run	Pieces	Freq.
			Req	Lev	Hours	Fed	- 7
			(min)			(000)	
INFEED STATION:	34**	Check TR1 Camera Optical Path Alignment	45*	10		440	
FICS MODULE		Check optical path alignment of the AFS100-CS					
		camera. Use KB0013803 for the procedure. If the					
		check indicates the camera needs an optical path					
		alignment, perform that procedure per MMO-038-20.					
		Ensure the camera mounting hardware is not loose.					
		* 15 minutes per infeed station.					
INFEED STATION:	35**	Perform TR1 Camera Dynamic Calibration.	60*	10		440	
FICS MODULE	55	Perform the AFSM100 CS camera dynamic	00	10		770	
1 100 MODULE		calibration per KB0013387.					
		Annotate values and adjustments in					
		equipment logbook.					
INICCO OTATION	20**	* 20 minutes per infeed station.	12*	40		4540	
INFEED STATION: FICS MODULE	36**	Check FICS Ink Jet Printer (IJP).	12"	10		1540	
LICS MODULE		Check that IJP vacuum gauge reads between 12 and 13 inches in vacuum.					
		2. Check IJP positive air with flow meter for 2.0					
		to 2.5 Standard Cubic Feet per Hour					
		(SCFH).					
		* 4 minutes per infeed station.					
INFEED STATION:	37**	Perform Photoeye Adjustments	45*	09		1540	
ENTIRE SYSTEM		Perform Feeder, FICS, and 950 Module Photo eye					
		adjustments per MS-178, Volume B, Section 4.					
		*15 minutes per infeed station					
INFEED STATION:	38**	Start the machine and each infeed; test each	40	09			М
ENTIRE SYSTEM		interlock switch.		00			101
		Open and close each cover and door, one					
		at a time, and check interlocks.					
		Observe that infeed stops and the carousel					
		continues to run for each infeed interlock					
		switch. Check that all associated lamps and					
		messages on the operator control panel					
		LCD display and Minitron display properly					
		report each interlock switch actuation.					
		3. Observe that the carousel stops when any					
		transport access cover or hood, over height					
		safety hood, and maintenance alley gates					
		are opened. Check that all associated lamps					
		and messages on the operator control panel					
		LCD display and Minitron display properly					
		report each interlock switch actuation.					
		4. On ATHS equipped machines, open and					
		close each tub destacker door and level					
		change module access door. Check that all					
		associated lamps and messages on the					
		operator control panel LCD display and					
		Minitron display properly report each					
		interlock switch actuation.					

Part or Component	Item	Task Statement and Instruction	Est.	Min.	Т	hreshold	ds
	No	(Comply with all current safety precautions)	Time			Pieces	Freq.
			Req	Lev	Hours	Fed	
INCCCD STATIONS	20**	Chack infeed station with Ultra Sania davise	(min)	00		(000)	
INFEED STATION: ENTIRE SYSTEM	39**	 Check infeed station with Ultra Sonic device. With the infeed station covers and doors open, start the infeed station. Using an Ultra Sound device and Airborne Probe, listen for the following: Abnormal bearing noise on each deck assembly along the top of the infeed module. Abnormal bearing noise on the bottom of each deck plate on the infeed module. Abnormal bearing and winding noise emanating from feeder motors. Vacuum leaking on each MAC valve assembly. Air leaking in the pneumatic system piping and components (i.e. hoses, vacuum tank, canister filter lid, etc.). Vacuum pump bearings and vacuum leakage. Vacuum turbine motor bearings and vacuum leakage. BrICS Labeler pneumatics panel for air leakage. Document all defective components for replacement. Close all covers and doors. 	21*	09		1540	
MAINI MACHINE.	40**	*7 minutes per infeed station.	00	07			N 4
MAIN MACHINE: EMERGENCY STOPS	40**	 Check ATHS, carousel and infeed station E-Stops. Start the carousel and each infeed station. Actuate E-Stop switch on operator control panel at Infeed Station #1. Observe that the carousel and all infeed stations stop. Observe that the lamp inside the E-Stop switch illuminates. Observe that the control panel E-Stop light illuminates and the LCD display reports an E-Stop. Observe that the sort module Minitron displays the appropriate E-Stop message. Observe that red lights on the light stacks illuminate. Repeat steps 1-7 for all remaining system E-Stops	60	07			M

MAIN MACHINE:	41** Check infeed station injector and main carouse	105	09	6600	
ENTIRE SYSTEM	chain tension.	100	00		
	Refer to MS-178 Volume B Maintenance				
	Information, Section 4 Alignment & Adjustment				
	Procedures, Injector sub-sections.				
	Place Drive Motor Lockout switch lever in				
	the OFF position and install lockout device.				
	Remove bucket assemblies to provide				
	access for infeed station injector check.				
	2. At the sort module on the left side, starting	,			
	at the level change unit and working toward				
	the drive module:				
	a. Remove six bucket modules.				
	b. Skip six bucket modules.				
	c. Remove six more bucket modules.				
	d. Skip six bucket modules.				
	e. Remove six bucket modules.				
	3. Remove lockout device and place Drive				
	Motor Lockout switch lever in the ON				
	position after bucket assemblies have been				
	removed.				
	4. Position carousel chain. Run carousel				
	until spaces from missing bucket assemblie	S			
	are under the three infeed station injector modules. Press E-Stop switch when spaces				
	from missing bucket assemblies are under	'			
	the three infeed injection modules.				
	· ·				
	5. Perform system shutdown. Shut down				
	system using MS-178 Vol B Shutdown and				
	Lockout Procedures.				
	6. Lock out power. Power down the machine				
	and lock out electrical power and				
	compressed air as prescribed by the currer	ı			
	local lockout instructions providing lockout/restore procedures.				
	7. Remove top center covers on tension				
	module.				
	8. Check the GIO tachometer belt for				
	damage. Check for debris on the pulleys.				
	CAUTION: If carousel chain tension is not within				
	specification and adjustment is performed				
	initiate action to check alignment of level chang				
	and infeed station proximity switches. Us procedures and specifications published in				
	handbook MS-178.	11			
	Hallubook Wig-170.				
	9. Check and adjust, if necessary, main				
	carousel chain tension. Using procedures				
	and specifications published in handbook				
	MS-178, check main carousel chain tension	1.			
	10. Check the main drive motor gearbox for				
	visible lubricant leaks. Notify supervisor of	f			
	lubricant leaks.	-			
	11. Check main drive motor brake. Check				
	main drive motor brake solenoid air gap an	t			
	gap an	1	1	· · · · · · · · · · · · · · · · · · ·	

Part or Component	Itom	em Task Statement and Instruction Est. Min. Thresh					10
Part or Component						hreshold	
	No	(Comply with all current safety precautions)	Time		Run	Pieces	Freq.
			Req	Lev	Hours	Fed	
			(min)			(000)	
		friction disc thickness using procedures and					
		specifications in handbook MS-178.					
		12. Check infeed station. (5 min per IFS)					
		 a. Injector area. Check for wear and 					
		debris. Check shock anti-wear					
		plates, and guide rail assembly for					
		wear and damage.					
		13. Install tension module covers removed					
		earlier. Install top covers on tension					
		module.					
		WADNING, Be equitions when working around or					
		WARNING: Be cautious when working around or					
		on equipment when power has been applied.					
		14. Return to service. Restore power to					
		machine as prescribed by the local lockout					
		procedure. Observe the AFSM100 Status					
		Screen on the MIS computer for the					
		following: Machine Status=System Ready,					
		NDSS-Available, USVPC-Connected, REC					
		VCS-Connected, Site VCS-Connected,					
		ORP-Ready, Feeder 1-Ready, Feeder 2-					
		Ready, Feeder 3-Ready, Printer-On-Line,					
		Right and Left Label Printer-Ready, ICS-On,					
		IPC-Ready, ATHS-Automatic. Notify					
		supervisor of any problems.					
		15. Start carousel and position carousel					
		chain so spaces are accessible in sort					
		module. Press E-Stop switch when all					
		missing bucket assembly spaces are visible					
		on one side of the sort modules.					
		16. Place Drive Motor Lockout switch lever in					
		the OFF position and install lockout device.					
		17. Install bucket assemblies removed earlier.					
		18. Remove lockout device and place Drive					
		Motor Lockout switch lever in the ON					
		position after all bucket assemblies have					
		been installed.					
MAIN MACHINE:	42**	Replace chain guide Teflon strips.	263	09		39600	
ENTIRE SYSTEM		Remove 12 consecutive bucket					
		assemblies. Place Drive Motor Lockout					
		switch lever in the OFF position and install					
		lockout device. On the right side of the sort					
		module, remove 12 consecutive bucket					
		assemblies starting at the safety hood and					
		working toward the level change unit.					
		Remove lockout device and place Drive					
		Motor Lockout switch lever in the ON					
		position after bucket assemblies have been					
		removed.					
		Position carousel chain. Run carousel and					
		press E-Stop switch when space from					
	l	hiess F-oroh swirch whell share holli					

Part or Component	Item	Task Statement and Instruction	Est.	Min.	Т	hreshold	ds
<u>'</u>	No	(Comply with all current safety precaution	ons) Time	Skill	Run	Pieces	Freq.
			Req	Lev	Hours	Fed	
		and the second s	, ,			(000)	
		missing bucket assemblies are at the side level change. This will enable a unobstructed view of the left side level change Teflon wear strips later in the Perform this step for the tension moright side level change, and drive metaflon strip replacement also. 3. Perform system shutdown. Shut do system using MS-178 Vol B Shutdow Lockout Procedures. 4. Lock out power. Power down the mand lock out electrical power and compressed air as prescribed by the local lockout instructions providing lockout/restore procedures. 5. Replace left side level change motels. a. Remove two side covers on change module. b. Remove the top 6 carrier brace to expose the top left level change Testrip NSN 3915-05-000-230. d. Reinstall every other carrier removed in step 5 b. e. Remove the lower 6 carrier brackets to expose the lower level change chain guide Testrip. f. Replace lower level change strip NSN 3915-05-000-230. g. Reinstall every other carrier removed in step 5 e. h. Reinstall two left level change strip NSN 3915-05-000-230. g. Reinstall every other carrier removed in step 5 e. h. Reinstall two left level change strip NSN 3915-05-000-230. g. Reinstall every other carrier removed in step 5 e. h. Reinstall two left level change strip NSN 3915-05-000-230. g. Reinstall every other carrier removed in step 5 e. h. Reinstall two left level change strip NSN 3915-05-000-230. g. Reinstall every other carrier removed in step 5 e. h. Reinstall two left level change strip NSN 3915-05-000-230. g. Reinstall every other carrier removed in step 5 e. h. Reinstall two left level change strip NSN 3915-05-000-230. g. Reinstall every other carrier removed in step 5 e. h. Reinstall two left level change strip NSN 3915-05-000-230. g. Reinstall every other carrier removed in step 5 e. h. Reinstall every other carrier removed in step 5 e. h. Reinstall every other carrier removed in step 5 e. h. Reinstall every other carrier removed in step 5 e.	de left an vel le PM. odule, odule down wn and machine le current		Hours	Fed (000)	
		IPC-Ready Notify supervisor of any	100 011,				
		problems.					
		 Position Carousel. Run carousel as E-Stop switch when space from mis 					

Part or Component	Item	Task Statement and Instruction	Est.	Min.	Т	hreshold	ds
<u>'</u>	No	(Comply with all current safety precautions)		Skill	Run	Pieces	Freq.
			Req	Lev	Hours	Fed	•
			(min)			(000)	
		bucket assemblies are at the tension					
		module. This will enable an unobstructed					
		view of the tension module Teflon wear strip					
		Perform system shutdown. Shut down					
		system using MS-178 Vol B Shutdown and					
		Lockout Procedures.					
		9. Lock out power. Power down the machine					
		and lock out electrical power and					
		compressed air as prescribed by the current					
		local lockout instructions providing					
		lockout/restore procedures.					
		10. Remove the lower tension module guide					
		rail.					
		11. Replace tension module Teflon chain					
		guide strip.					
		a. Remove carrier brackets to expose the tension module Teflon chain					
		guide strip.					
		b. Replace tension module Teflon					
		chain guide strip NSN 3915-05-000-					
		2312.					
		c. Reinstall carrier brackets removed					
		in step 11a.					
		d. Reinstall lower tension module					
		guide rail.					
		e. Reinstall the four top tension					
		module covers.					
		12. Remove two right side level change side					
		covers.					
		Return to service. Restore power to					
		machine as prescribed by the local lockout					
		procedure Observe the AFSM100 Status					
		Screen on the MIS computer for the					
		following: Machine Status=System Ready,					
		NDSS-Available, USVPC-Connected, REC					
		VCS-Connected, Site VCS-Connected,					
		ORP-Ready, Feeder 1-Ready, Feeder 2-					
		Ready, Feeder 3-Ready, Printer-On-Line,					
		Right and Left Label Printer-Ready, ICS-On					
		IPC-Ready. Notify supervisor of any					
		problems. 14. Position carousel . Run carousel and press					
		E-Stop switch when space from missing					
		bucket assemblies are at the right side level					
		change module. This will enable an					
		unobstructed view of the the right side level					
		change module Teflon wear strips					
		15. Perform system shutdown. Shut down					
		system using MS-178 Vol B Shutdown and					
		Lockout Procedures.					
		16. Lock out power. Power down the machine					
		and lock out electrical power and					

Part or Component	Item	Task Statement and Instruction	Est.	Min.	Т	hreshold	ds
	No	(Comply with all current safety precautions)	Time		Run	Pieces	Freq.
			Req	Lev	Hours	Fed	
			(min)			(000)	
		compressed air as prescribed by the current					
		local lockout instructions providing					
		lockout/restore procedures.					
		17. Replace right side level change module					
		Teflon strips.					
		 a. Remove the top carrier brackets to 					
		expose the top right level change					
		chain guide Teflon strip.					
		b. Replace top level change Teflon					
		strip NSN 3915-05-000-2308.					
		c. Reinstall carrier brackets removed					
		in step 17a.					
		d. Remove the lower carrier brackets					
		to expose the lower right level					
		change chain guide Teflon strip.					
		e. Replace lower level change Teflon					
		strip NSN 3915-05-000-2308. f. Reinstall carrier brackets removed					
		in step 17d.					
		B 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					
		g. Reinstall two right level change side covers					
		h. Remove the two end drive module					
		covers.					
		18. Return to service. Restore power to					
		machine as prescribed by the local lockout					
		procedure Observe the AFSM100 Status					
		Screen on the MIS computer for the					
		following: Machine Status=System Ready,					
		NDSS-Available, USVPC-Connected, REC					
		VCS-Connected, Site VCS-Connected,					
		ORP-Ready, Feeder 1-Ready, Feeder 2-					
		Ready, Feeder 3-Ready, Printer-On-Line,					
		Right and Left Label Printer-Ready, ICS-On,					
		IPC-Ready. Notify supervisor of any					
		problems.					
		19. Position carousel . Run carousel and press					
		E-Stop switch when space from missing					
		bucket assemblies are at the drive module.					
		This will enable an unobstructed view of the					
		drive module Teflon wear strip					
		20. Perform system shutdown. Shut down					
		system using MS-178 Vol B Shutdown and					
		Lockout Procedures.					
		21. Lock out power. Power down the machine					
		and lock out electrical power and					
		compressed air as prescribed by the current local lockout instructions providing					
		lockout/restore procedures.					
		22. Remove the lower drive module guide					
		rail.					
		23. Replace drive module Teflon chain guide					
		strip.					
		outp.					

Part or Component	Item							
	No	(Comply with all current safety precautions)	Time	Skill	Run	Pieces	Freq.	
			Req	Lev	Hours	Fed		
			(min)			(000)		
		a. Remove carrier brackets to expose the drive module Teflon chain guide strip. b. Replace drive module Teflon chain guide strip NSN 3915-05-000-2312. c. Reinstall all carrier brackets. d. Reinstall lower drive module guide rail. e. Reinstall two end drive module covers. 24. Return to service. Restore power to machine as prescribed by the local lockout procedure. Observe the AFSM100 Status Screen on the MIS computer for the following: Machine Status=System Ready, NDSS-Available, USVPC-Connected, REC VCS-Connected, Site VCS-Connected, ORP-Ready, Feeder 1-Ready, Feeder 2-Ready, Feeder 3-Ready, Printer-On-Line, Right and Left Label Printer-Ready, ICS-On, IPC-Ready. Notify supervisor of any problems. 25. Position Carousel. Run carousel and press E-Stop switch when space from missing bucket assemblies are along the left side sort modules. This will enable the bucket assemblies to be replaced. 26. Replace 12 consecutive bucket assemblies. Place Drive Motor Lockout switch lever in the OFF position and install lockout device. On the left side of the sort module, install the 12 consecutive bucket assemblies removed in step 1. Remove lockout switch lever in the ON position after bucket assemblies have been installed. 27. Check operation. Run the carousel and observe smooth transition of bucket/carrier bracket assemblies as they transition between level change, tension and drive module areas.						
MAIN MACHINE:		Observe the sort module alignment.	10	07		39600		
SORT MODULE		Start the carousel and observe bucket travel.						
		Buckets should travel smoothly and not bounce.						
		Notate bucket number of any individual bucket that						
		does not travel smoothly or bounces. Notate module						
		transition locations where bucket bouncing occurs.						
		Notify supervisor of notations.						

Part or Component	ltom		Took Statement and Instruction	_ Cot	Min.	Г т	broobolo	40
Part of Component	Item No	(C	Task Statement and Instruction	Est. Time			hreshold	
	INO	()	omply with all current safety precautions)	_		Run	Pieces	Freq.
				Req	Lev	Hours		
	4 4 4 4 4			(min)			(000)	
MAIN MACHINE:	44**		e carrier bracket alignment.	6	09		39600	
CARRIER			e carousel, enter the maintenance alley, and					
BRACKET AND			e the alignment of carrier brackets. All carrier					
CHAIN ASSEMBLY			wheels should make contact with the rail.					
			or replace carrier brackets that are not					
			y aligned or defective.					
SORT MODULE:	45**		operation of carousel safety hoods, drive	5	09			M
ENTIRE SYSTEM		module	e brake, & torque limiter.					
			Ensure there is no mail in carrier buckets.					
		2.	Insert a pliable piece of cardboard in a					
			carrier bucket at chute #30. The cardboard					
			should stick up above the top of the bucket					
			sufficiently to actuate the safety hood at the					
		_	entry to the drive module.					
		3.	With safety hood in normal operating					
			position, make two marks on safety hood					
			drawer slide assembly: one mark 8" and					
			another mark 11" from the frame to					
			establish acceptable travel distance limits of					
			the safety hood.					
		4.	Start carousel. When cardboard strikes					
			safety hood, observe that the carousel					
			stops. The cardboard should move the safety hood between 8" and 11".					
		5	Insert a pliable piece of cardboard in a					
		5.	carrier bucket at chute #90.					
		6	Repeat items 3 and 4 for the level change					
		0.	module safety hood.					
		If carou	isel does not stop within prescribed limits, or					
			ssive backlash is observed, initiate action to					
			main drive brake and torque-limiter					
		adjustn						
	I	o.j o. o t. i						

Part or Component	Item								
	No	(Comply with all current safety precautions)	Time		Run	Pieces	Freq.		
			Req	Lev	Hours	Fed	·		
			(min)			(000)			
MAIN MACHINE:		Check Infeed Station, Main Electrical Cabinet,	25	09		1540			
ENTIRE SYSTEM		and ATHS with thermal imaging device.							
		Open the infeed station electrical panel doors and							
		the main electrical cabinet door. Scan the following electrical panels for abnormal hot spots and close							
		the panel doors once the scan is completed.							
		Infeed station electrical panels (breaker)							
		panel and CCT board panel) for abnormal							
		hot spots.							
		2. ATD electrical panel (right side).							
		Destacker electrical panel (right side)							
		Lift/Rotate electrical panel (right side)							
		5. Print/Apply module electrical panel (right							
		side)							
		6. Each Insert/Extract module electrical panel							
		(right side)							
		7. Discharge module electrical panel (right side)							
		8. ATHS Main Electrical Cabinet							
		AFSM Main Electrical Cabinet panel							
		10. Discharge module electrical panel (left side)							
		11. Each Insert/Extract module electrical panel							
		(left side)							
		12. Print/Apply module electrical panel (left							
		side)							
		13. Lift/Rotate electrical panel (left side)							
		14. Destacker electrical panel (left side)							
		15. ATD electrical panel (left side)							
ATUQ: ATUQ	Document all abnormal findings for corrective ac THS: ATHS 47 Check labeler air pressure gauge.					220			
PRINT/APPLY		Ensure that the ATHS labeler air pressure is	2*	09		220			
MODULE		between 45 - 50 PSI, and adjust as necessary.							
MODULE									
		* 1 minute per side.							

Part or Component	Item	Task Statement and Instruction	Est.	Min.	T	hreshold	ds
	No	(Comply with all current safety precautions)	Time		Run	Pieces	Freq.
			Req	Lev	Hours	Fed	
MAINI MACHINE.	40**	Day Daily Tast Dayly	(min)	00		(000)	
MAIN MACHINE: ENTIRE SYSTEM		Run Daily Test Deck. Alternate between the MTSCEVEN and	24	09			D
LIVITINE STOTEW		MTSCODD sortplans daily.					
		Set up the AFSM100 to run the daily test					
		deck using the MTSCEVEN or MTSCODD					
		sortplan. Put the machine in BCR/OCR					
		mode.					
		Load each 22 piece grouping on all three infeed stations and start the run.					
		3. Observe pick-off and vacuum gauge during					
		the destacking of the mail. Open the feeder					
		back door and observe that the vacuum					
		gauge does not fluctuate more than 5 units					
		as each mailpiece is fed. Verify that the					
		vacuum recovers to high vacuum as each					
		mailpiece is picked off. Close the feeder back door.					
		4. Perform an End of Run.					
		Collect test deck pieces from mail tubs.					
		Review FICS label placement on template					
		pieces for proper placement and remove					
		FICS labels (approximately 33 labels to be					
		removed). 7. Remove tray labels from mail tubs.					
		8. Any piece failures should be noted and a					
		work order generated for					
		troubleshooting/corrective maintenance					
		action.					
INFEED STATION:	49**	Run Feeder Performance Test Deck.	75*	09		1540	
FEEDER MODULE		Get ready to run the 9-group performance deck by setting up test at MIS computer using sort program					
		MTSCSG. Test each infeed station using					
		performance deck provided with FEDR modification					
		and print report. Generate a					
		troubleshooting/corrective maintenance work order					
		for stress groups not in tolerance.					
		* 25 minutes per infeed station.					
FINAL-CLEANUP		Clean up.	5	All			
		Ensure all tools, lubricants, rags, etc., are removed					
		from the work area. Annotate deficiencies found and					
		repairs performed in the Maintenance logbook. Notify supervisor and/or generate work orders per					
		local SOP to document/initiate corrective					
		maintenance activity for deficiencies found.					

^{*} 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 4

AFSM100 (NON ATHS) TR 1 MASTER CHECKLIST

09-AFSM100-AF-001-M

OPERATIONAL MAINTENANCE (OM)

Time Total: (29) minutes

U.S. Postal Service	IDENTIFICATION															
Maintenance Checklist	WORK EQUIPMENT CODE ACRONYM					_	ASS DE	N	JMBI	ĒR	TYPE					
		9	Α	F	S	М	1	0	0		Α	F	0	0	1	М
Equipment Nomenclature Automated Flats Sorting Machine 100		Α	Equi FSN	pmen I100							ilenam 0136	e			urrend CBM	-

Part or Component	Item	Task Statement and Instruction	Est.	Min.	Т	hreshold	le
Fait of Component	No	(Comply with all current safety precautions)	Time		Run	Pieces	Freq.
	110	(Comply with all current safety precautions)	Req	Lev	Hours	Fed	rieq.
			(min)	_0,	110013	(000)	
SAFETY	1.	COMPLY WITH ALL SAFETY PRECAUTIONS.	1	All		(000)	
STATEMENT	1.	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.	1	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 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.					

Part or Component	Item	Task Statement and Instruction	Est.	Min.	Т	hreshold	ds
	No	(Comply with all current safety precautions)	Time Req (min)		Run Hours	Pieces Fed (000)	Freq.
MAIN MACHINE: ENTIRE SYSTEM	2	NOTE: Performed during operational tours, two tours per day.	5	09			T
		 Monitor equipment condition. 1. Check maintenance logbook for any outstanding issues. 2. Ask operators (feeders and sweepers) and operations supervisor if they are aware of any equipment problems. Investigate reported problems. 					
SUPERVISOR STATION: MIS COMPUTER	3	NOTE: Performed during operational tours, two tours per day. Check MIS computer. 1. Evaluate MIS computer sort status screen and interim EOR report production totals and rejects to identify abnormal performance such as low read rate, excessive VCS timeouts, excessive jams, low throughput, high occupancy, etc. 2. Check for warnings on AFSM100 diagram and the bottom of the MIS computer screen such as photocell low gain warnings, red or yellow indicators. 3. Observe bucket screen on MIS computer to identify malfunctions and mail stuck in buckets.		10			Т

Part or Component	Item	Task Statement and Instruction	Est.	Min.	Т	hreshold	ls
	No	(Comply with all current safety precautions)	Time		Run	Pieces	Freq.
			Req	Lev	Hours	Fed	
INFEED STATION:	4	NOTE: Performed during operational tours, two	(min) 3*	09		(000)	т
INFEED STATION		tours per day.	J	00			•
		Check in-feed stations.					
		Observe warning lamps, warning horns,					
		and startup delay operate properly.					
		Observe feeder module operation for proper paddle motion, belt motion, mail					
		piece presentation, and pickoff. Listen for					
		unusual noise and observe for excessive					
		vibration.					
		Observe mail as it is processed in the destacker. Observe for excessive double					
		feeds. Mail destacking and transport should					
		be smooth and mail should start and stop					
		promptly at each staging point in the mail path. Presser assemblies should not					
		bounce excessively.					
		4. Observe Image display of IPC for proper					
		Capture of mail piece images, aperture blockages, or unusual read/reject rates.					
		5. Observe mail as it is transported through					
		the buffer and accelerator. Mail transport					
		should be smooth and mail should start and stop promptly at each staging point in					
		the mail path.					
		Check for excessive mail under the					
		injectors. 7. Observe buckets through clear Lexan					
		cover near each infeed station injector.					
		Observe that carts transition smoothly out					
		of the injector section, and at infeed station					
		one, for a smooth transition into the tension module.					
		* 1 minute per Infeed					
LEVEL CHANGE	5	NOTE: Performed during operational tours, two	2	09			Т
MODULE: LEVEL		tours per day.	_				
CHANGE MODULE		Check level change module.					
		Label printer label quality check. Randomly					
		select labels from each label printer and					
		observe for acceptable print quality.2. Observe for proper operation of label cutter					
		and stacker during normal label printer					
		operation.					
		 Observe compressed air pressure (level change module). Regulator gauge for 					
		incoming air should display 90 ± 5 PSI.					
		Regulator gauge for infeed supply air					
		should display 85 ± 5 PSI.					

Part or Component	Item	Task Statement and Instruction	Est.	Min.		hreshold	
	No	(Comply with all current safety precautions)	Time		Run	Pieces	Freq.
			Req (min)	Lev	Hours	Fed (000)	
SORT MODULE:	6	NOTE: Performed during operational tours, two	7	09		(-30)	Т
SORT MODULE		tours per day.					
		 Check sort modules. During operational break, use maintenance diagnostic bucket screen to identify and remove mail stuck in and on top of buckets. Observe that warning lamps, warning horns, and startup delay operate properly. Observe that bin indicators and tub present switches function properly. Observe take-away belts on each side of machine for condition and tracking. Listen for unusual noises emanating from take-away belt drive modules. Check general condition of powered roller and skate wheel conveyors at end of machine. Observe bucket assemblies for loose and missing hardware and doors that open prematurely. Randomly select mail from tubs and check FICS label position and clarity of IJP sprayed bar code. 					
DRIVE MODULE:	7	8. Check random bin tub labels for clarity. NOTE: Performed during operational tours, two	1	09			Т
DRIVE MODULE		tours per day.	-				-
		 Check drive module. Observe power factor controller operation. The power factor controller should be set to achieve unity power factor, signified by a display of 0.95 to 1.00 in the display. Observe for excessive voltage fluctuation at the power factor controller panel. Listen for unusual noises emanating from drive module. 					
MAIN MACHINE: ENTIRE SYSTEM	8	NOTE: Performed during operational tours, two tours per day.	5	09			Т
		Annotate deficiencies found and repairs performed in the Maintenance logbook. Notify supervisor and/or generate work orders per local SOP to document/ initiate corrective maintenance activity for deficiencies found.					

^{*} 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 5

AFSM100 (ATHS) TR 1 MASTER CHECKLIST

09-AFSM100-AG-002-M

OPERATIONAL MAINTENANCE (OM)

Time Total: (29) minutes

U.S. Postal Service	IDENTIFICATION														
Maintenance Checklist	_	WORK CODE				QUIF ACRO				_	ASS DE	N	UMBE	ER	TYPE
	0	9	Α	F	S	М	1	0	0	Α	G	0	0	2	М
Equipment Nomenclature Automated Flats Sorting Machine 100				pmen 1100					Bulletin mm2	Filenamo 20136	е			urrend CBM	-

Part or Component	Item	Task Statement and Instruction	Est.	Min.	Th	ds	
'	No	(Comply with all current safety precautions)	Time	Skill	Run	Pieces	Freq.
		,	Req	Lev	Hours		•
			(min)			(000)	
SAFETY	1.	COMPLY WITH ALL SAFETY PRECAUTIONS.	1	All			
STATEMENT		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.					

Part or Component	Item	Task Statement and Instruction	Est.	Min.	TI	nreshol	ds
	No	(Comply with all current safety precautions)	Time	Skill		Pieces	Freq.
			Req (min)	Lev	Hours	Fed (000)	
MAIN MACHINE:	2	NOTE: Parformed during energianal tours two	5	09		(000)	T
ENTIRE SYSTEM		NOTE: Performed during operational tours, two tours per day.	Э	09			ı
LIVIIIL OTOTEW		Monitor equipment condition.					
		Check maintenance logbook for any					
		outstanding issues.					
		Ask operators (feeders and sweepers) and					
		operations supervisor if they are aware of					
		any equipment problems. Investigate reported problems.					
SUPERVISOR	3	NOTE: Performed during operational tours, two	5	10			Т
STATION: MIS		tours per day.					
COMPUTER		, ,					
		Check MIS computer. 1. Evaluate MIS computer sort status screen					
		and interim EOR report production totals					
		and rejects to identify abnormal					
		performance such as low read rate,					
		excessive VCS timeouts, excessive jams,					
		low throughput, high occupancy, etc.					
		Check for warnings on AFSM100 diagram and the bottom of the MIS computer screen					
		such as photocell low gain warnings, red or					
		yellow indicators.					
		3. Observe bucket screen on MIS computer to					
		identify malfunctions and mail stuck in					
		buckets.					

Part or Component		Task Statement and Instruction	Est.	Min.		reshol	
	No	(Comply with all current safety precautions)	Time	Skill		Pieces	Freq.
			Req	Lev	Hours	Fed	
			(min)			(000)	
INFEED STATION:		NOTE: Performed during operational tours, two	3*	09			Т
INFEED STATION		tours per day.					
		Check in-feed stations.					
		Observe warning lamps, warning horns, and					
		startup delay operate properly.					
		2. Observe feeder module operation for proper					
		paddle motion, belt motion, mail piece					
		presentation, and pickoff. Listen for unusual					
		noise and observe for excessive vibration.					
		Observe mail as it is processed in the					
		destacker. Observe for excessive double					
		feeds. Mail destacking and transport should					
		be smooth and mail should start and stop					
		promptly at each staging point in the mail					
		path. Presser assemblies should not bounce excessively.					
		 Observe mail as it is transported through the 					
		buffer and accelerator. Mail transport should					
		be smooth and mail should start and stop					
		promptly at each staging point in the mail					
		path.					
		Check for excessive mail under the					
		injectors.					
		6. Observe buckets through clear Lexan cover					
		near each infeed station injector. Observe					
		that carts transition smoothly out of the					
		injector section, and at infeed station one,					
		for a smooth transition into the tension					
		module.					
		Observe image display of IPC for proper					
		capture of mail piece images, aperture					
		blockage or unusual read or reject rates.					
		* 1 minute per Infeed					

Part or Component	Item	Task Statement and Instruction	Est.	Min.	TI	nresholo	ds
	No	(Comply with all current safety precautions)	Time	Skill	Run	Pieces	Freq.
			Req	Lev	Hours	Fed	
			(min)			(000)	
SORT MODULE:	5	NOTE: Performed during operational tours, two	7	09			Т
SORT MODULE		tours per day.					
		Charles and mandales					
		Check sort modules.					
		During operational break, use maintenance diagnostic bucket screen to identify and					
		remove mail stuck in and on top of buckets.					
		2. Observe that warning lamps, warning horns,					
		and startup delay operate properly.					
		3. Observe that bin indicators and tub present					
		switches function properly.					
		Observe take-away belts on each side of					
		machine for condition and tracking. Listen					
		for unusual noises emanating from take-					
		away belt drive modules.					
		5. Check general condition of powered roller					
		and skate wheel conveyors at end of					
		machine.					
		Observe bucket assemblies for loose and					
		missing hardware and doors that open					
		prematurely.					
		7. Randomly select mail from tubs and check					
		FICS label position and clarity of IJP					
		sprayed bar code.					
DDIVE MODULE		8. Check random bin tub labels for clarity.	4				_
DRIVE MODULE:	6	NOTE: Performed during operational tours, two	1	09			Т
DRIVE MODULE		tours per day.					
		Check drive module.					
		Observe power factor controller operation.					
		The power factor controller should be set to					
		achieve unity power factor, signified by a					
		display of 0.95 to 1.00 in the display.					
		2. Observe for excessive voltage fluctuation at					
		the power factor controller panel.					
		Listen for unusual noises emanating from					
		drive module.					
ATHS: ATHS	7	NOTE: Performed during operational tours, two	2	09			Т
		tours per day.					
		Charle ATUS					
		Check ATHS.					
		Observe general operation of the ATHS system.					
		2. Observe the tracking of all ATHS belts					
		starting at the accumulation module and					
		work around to the discharge module.					
		3. Observe the ATHS printer apply labels and					
		verify the labels are applied properly.					
		70, and tables and applied properly!			1		

Part or Component	Item	Task Statement and Instruction	Est.	Min.	Ti	nreshol	ds
	No	(Comply with all current safety precautions)	Time	Skill	Run	Pieces	Freq.
			Req	Lev	Hours	Fed	
			(min)			(000)	
MAIN MACHINE: ENTIRE SYSTEM		NOTE: Performed during operational tours, two tours per day.	5	09			Т
		Annotate deficiencies found and repairs performed in the Maintenance logbook. Notify supervisor and/or generate work orders per local SOP to document/ initiate corrective maintenance activity for deficiencies found.					

^{*} 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 6

AFSM100 (ATHS & NON ATHS) TR 1 MASTER CHECKLIST

09-AFSM100-**-003-M

OPERATIONAL MAINTENANCE (OM)

Time Total: (25) minutes

U.S. Postal Service	IDENTIFICATION															
Maintenance Checklist		RK DE									C C	NI	UMBE	TYPE		
	0	9	Α	F	S	М	1	0	0		*	*	0	0	3	М
Equipment Nomenclature	Equipment Model								Bul	letin [ilename	Э	Occurrence			ce
Automated Flats Sorting Machine		AFSM100 (ATHS & NON								mm20136				e(CBM	
100	ATHS)															

** Class Codes = AF & AG

Part or Component	Item	Task Statement and Instruction	Est.	Min.	T	hreshold	ds
	No	(Comply with all current safety precautions)	Time		Run	Pieces	Freq.
			Req	Lev	Hours	Fed	
0.4.5557.4			(min)			(000)	
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.	1	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 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.					

Part or Component	Item	Task Statement and Instruction	Est.	Min.	Т	hreshold	
	No	(Comply with all current safety precautions)	Time Req (min)	Skill Lev	Run Hours	Pieces Fed (000)	Freq.
GENERAL		The intent of this checklist is to analyze equipment performance and identify and document corrective actions required during the next PM window to optimize equipment reliability. WARNING: Be cautious when working around or on equipment when power has					
		been applied.					
SUPERVISOR WORK STATION MIS COMPUTER	2.	Generate and print End of Run and End of Day reports. Compile and analyze reports. Check for read rates, throughputs, jam rates and locations, reject rates, and maintenance functions.		10			D
SUPERVISOR WORK STATION MIS COMPUTER	3.	Perform trend analysis at the MIS computer. Perform trend analysis at the MIS computer, using maintenance bus information, to identify signs of degraded equipment performance. Check for and record all real-time errors reported on the AFSM100 graphical display for red or yellow indicators and lower portion of the MIS screen for maintenance log messages indicating error conditions (photocell low gain warnings, etc.).		10			D
		 Observe bucket screen on MIS computer. Identify malfunctions and mail stuck in buckets. 					
		 Check equipment logbook for entries. Investigate problems. Initiate corrective action to address deficiencies in accordance with local SOP. 					