Maintenance Management Order

UNITED STATES POSTAL SERVICE™

SUBJECT: Cross Belt Sorter (CBS) Operational and Preventive Maintenance

DATE: March 5, 2015

NO: MMO-093-14

TO: Manager Maintenance, All Rapistan CBS Sites

FILE CODE: Y10

pmur:mm14028ae

Online Change Record		
Change #	**Date**	**Description of Change**
1	2/09/2021	Attachment 2, Item 3, Added Step 6 to close induction station covers and panels. Attachment 3, Item 3, Added Step to Replace the cover to the underside of all incline belts.

This Maintenance Management Order (MMO) provides Operational and Preventive Maintenance Guidelines for the Rapistan Cross Belt Sorter (CBS). The acronym is CBS and the class code is AA.

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.

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

Maintenance Managers are to use these Preventive Maintenance Checklists when preparing the route sheets for local maintenance personnel.

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

> **WARNING**
>
> **Various products requiring Material Safety Data Sheets (MSDS) may be utilized during the performance of the procedures in this bulletin. Ensure the current MSDS for each product used is on file and available to all employees. When reordering such a product, it is**

suggested that current MSDS be requested.   Refer to MSDS for appropriate personal protective equipment.

WARNING

The use of compressed or blown air is prohibited. An alternative cleaning method such as a HEPA filtered vacuum cleaner, a damp rag, lint-free cloth, or brush must be used in place of compressed or blown air.

Direct any questions or comments concerning this bulletin to the MTSC HelpDesk, online at https://tickets.mtsc.usps.gov/login.php or call (800) 366-4123 or (405) 573-2123.

Robert E. Albert
Manager
Maintenance Technical Support Center
HQ Maintenance Operations

Attachments   1.   Summary Workload Estimate for CBS
2.   Master Checklist: 03-CBS-AA-001-M: Daily PM
3.   Master Checklist: 03-CBS-AA-002-M: Weekly PM
4.   Master Checklist: 03-CBS-AA-003-M: Monthly PM
5.   Master Checklist: 03-CBS-AA-004-M: Quarterly PM
6.   Master Checklist: 03-CBS-AA-005-M: Semi-Annual PM
7.   Master Checklist: 09-CBS-AA-001-M: Operational Maintenance

ATTACHMENT 1

SUMMARY

WORKLOAD ESTIMATE

FOR CBS

Site Name	Induction Stations	LIM Modules	Days/ Week	Routine Servicing Time (Hrs/Yr)	Repair Time (Hrs/Yr)	Total Servicing Time (Hrs/Yr)	Non-Productive Time (Hrs/Yr)	Operational Maintenance Time (Hrs/Yr)	Total Time Time (Hrs/Yr)
Greater Newark P&DC #1	10	26	6	2391.59	717.48	3109.07	310.91	1422.72	4842.70
			7	2616.92	785.08	3402.00	340.20	1659.84	5402.04
Greater Newark P&DC #2	8	10	6	1778.90	533.67	2312.57	231.26	1060.80	3604.63
			7	1944.43	583.33	2527.76	252.78	1237.60	4018.14
Bethpage NY P&DC #1	8	20	6	2002.63	600.79	2603.42	260.34	1248.00	4111.76
			7	2189.83	656.95	2846.78	284.68	1456.00	4587.46
Bethpage NY P&DC #2	8	10	6	1778.90	533.67	2312.57	231.26	1060.80	3604.63
			7	1944.43	583.33	2527.76	252.78	1237.60	4018.14
Nashua NH P&DC #1	8	24	6	2092.13	627.64	2719.77	271.98	1322.88	4314.63
			7	2287.99	686.40	2974.39	297.44	1543.36	4815.19

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<u>ATTACHMENT 2</u>

CBS MASTER CHECKLIST

03-CBS-AA-001-M

Multipliers:

* Items are multiplied by the number of induction stations

** Items are multiplied by the number of LIM Modules

U.S. Postal Service **Maintenance Checklist**	IDENTIFICATION										
	WORK CODE	EQUIPMENT ACRONYM					CLASS CODE		NUMBER		TYPE
	0 3	C B S					A A		0 0 1		M

Equipment Nomenclature Rapistan Cross Belt Sorter	Equipment Model	Bulletin Filename mm14028	Occurrence Daily

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.
SAFETY STATEMENT	1.	**COMPLY WITH ALL SAFETY PRECAUTIONS. Disconnect power and apply lockouts when required by this instruction. Refer to current local lockout procedures to properly shut down and lock out this machine. Open equipment and inspect dust conditions. Check for suspicious dust or unusual debris. If any unusual substance is found, notify supervisor prior to proceeding with any further action on the equipment.** **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 supervisor immediately upon detection.** **WARNING FOR EWP/PPE. Steps contained in this bulletin may require the use of Personal Protective Equipment (PPE). Refer to the current Electrical Work Plan (EWP) MMO for appropriate PPE and barricade requirements.**	1	ALL			
SYSTEM	2.	**Power down and lock out power.** **WARNING** **Steps contained in this bulletin require the use of Personal Protective Equipment (PPE). Refer to the current Electrical Work Plan (EWP) for appropriate PPE and barricade requirements.** Power down and lock out power as prescribed by the current local lockout instructions providing lockout/restore procedures.	25	07			

U.S. Postal Service **Maintenance Checklist**	IDENTIFICATION												
	WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER		TYPE
	0	3	C	B	S				A	A	0	0 1	M

Equipment Nomenclature Rapistan Cross Belt Sorter	Equipment Model	Bulletin Filename mm14028	Occurrence Daily

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.
MAIL SEARCH	3.	**Perform mail search on the induction stations.** 1. Open induction station covers and panels. 2. Perform mail search; return all recovered mail pieces to the proper operation. 3. Report any excessive dust or debris build up or defective belts observed during mail search to supervisor. 4. Close all induction station covers and panels. 5. Check for mail between induction stations and on platform. 6. Close induction station covers and panels.	10*	07			
	4.	**Perform mail search on the main sorter.** Walk entire sorter to: 1. Clear nets of debris and parcels. 2. Clear chutes of debris and parcels. 3. Visually check sorter for any damage (i.e. photo eyes, re-centering station, carrier test station, E-Stops, stack lights, encoder, etc).	2.5**	07			
INDUCTION STATIONS	5.	**Check induction stations.** 1. Clean rollers and bearings of debris. 2. Wipe down all photo eyes using lint free cloth.	4*	07			
SYSTEM	6.	**Clean up**. Ensure all tools, lubricants, rags, etc., are removed from the work area. Report all deficiencies to supervisor.	3	07			
	7.	**Restore power**. Restore equipment to service as prescribed by the current local procedure providing lockout/restore procedures.	20	07			

U.S. Postal Service	IDENTIFICATION										
Maintenance Checklist	WORK CODE	EQUIPMENT ACRONYM					CLASS CODE		NUMBER		TYPE
	0	3	C	B	S			A	A	0	0	1	M

Equipment Nomenclature	Equipment Model	Bulletin Filename	Occurrence
Rapistan Cross Belt Sorter		mm14028	Daily

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.
	8.	**Perform checks prior to operational start up.** 1. With the sorter powered-up but not running, actuate any E-Stop and verify actuation on the FMPCS Graphical System Interface. 2. Reset the system to clear the E-Stop. 3. Start sorter, ensuring that all audible and visual safety alarms are operational. 4. Check all induction stations to ensure operation. On each station : 　a. The Operator Display Panel should indicate: 　　1) IU Stopped 　　2) Sorter Running 　b. Place Auto/Manual switch in Auto mode. 　c. Activate the Reset button. 　d. Activate the Run button. 　e. Induction unit belts should sequentially start. 　f. The Operator Display Panel should now indicate: 　　1) IU Running 　　2) Sorter Running 5. Check belt tracking on all belts. Ensure belt is centered and does not wander.	3+.5*	09			
	9.	**Restore equipment to service**. Restore equipment to operational service. Report all deficiencies to supervisor.	3	07			

ATTACHMENT 3

CBS WEEKLY MASTER CHECKLIST

03-CBS-AA-002-M

Multipliers:

* Items are multiplied by the number of induction stations

** Items are multiplied by the number of LIM Modules

U.S. Postal Service **Maintenance Checklist**	IDENTIFICATION													
	WORK CODE	EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE	
	0	3	C	B	S				A	A	0	0	2	M

Equipment Nomenclature Rapistan Cross Belt Sorter	Equipment Model	Bulletin Filename mm14028	Occurrence Weekly

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.
SAFETY STATEMENT	1.	**COMPLY WITH ALL SAFETY PRECAUTIONS. Disconnect power and apply lockouts when required by this instruction. Refer to current local lockout procedures to properly shut down and lock out this machine. Open equipment and inspect dust conditions. Check for suspicious dust or unusual debris. If any unusual substance is found, notify supervisor prior to proceeding with any further action on the equipment.** **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 supervisor immediately upon detection.** **WARNING FOR EWP/PPE.** **Steps contained in this bulletin may require the use of Personal Protective Equipment (PPE). Refer to the current Electrical Work Plan (EWP) MMO for appropriate PPE and barricade requirements.**	1	ALL			
SYSTEM	2.	**Power down and lock out power**. ┌─────────────────┐ │ **WARNING** │ └─────────────────┘ **Steps contained in this bulletin require the use of Personal Protective Equipment (PPE). Refer to the current Electrical Work Plan (EWP) for appropriate PPE and barricade requirements.** Power down and lock out power as prescribed by the current local lockout instructions providing lockout/restore procedures.	25	07			

U.S. Postal Service **Maintenance Checklist**		IDENTIFICATION										
	WORK CODE	EQUIPMENT ACRONYM						CLASS CODE		NUMBER		TYPE
	0 3	C	B	S				A	A	0 0	2	M

Equipment Nomenclature Rapistan Cross Belt Sorter	Equipment Model	Bulletin Filename mm14028	Occurrence Weekly

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.
INDUCTION STATIONS	3.	**Clean induction station incline belts.** Remove the cover from the underside of all incline belts. Completely clean the area inside, remove any build up or foreign objects such as string from rollers and bearings. Replace the cover to the underside of all incline belts.	36*	07			
	4.	**Chute cleaning**. Clean one section of chutes using HEPA filter vacuum (Example: 100 Section, 200 Section, etc.).	30	07			
SYSTEM	5.	**Restore equipment to service**. Restore equipment to service as prescribed by the current local procedure providing lockout/restore procedures.	20	07			
MAIN SORTER	6.	**E-Stop checks.** With the sorter powered up but not running, actuate all E-Stops one at a time and verify actuation on the FMPCS Graphical System Interface or the System E-Stop indicator light on the Cross Belt Power Management Panel.	3**	07			

	7.	**Perform inspection on and clean 15 carrier cells.**
		
		Visually inspect the following for wear, cracks, damage, or defects:
		
		1. Belt tracking
		
		2. Motor connections
		
		3. Ground wire
		
		4. Inspect and clean wheels
		
		5. Belts and pulleys
		
		6. Shields
		
		7. Wipe down cell reflectors
		
		8. Truck
		
		9. On master cells:
		
		    a. Check collector brushes
		
		    b. Check black box connections
		
		    c. Cell servo controller bracket
			150	09			

U.S. Postal Service	IDENTIFICATION										
Maintenance Checklist	WORK CODE	EQUIPMENT ACRONYM						CLASS CODE		NUMBER	TYPE
	0	3	C	B	S				A	A	0	0	2	M

Equipment Nomenclature	Equipment Model	Bulletin Filename	Occurrence
Rapistan Cross Belt Sorter		mm14028	Weekly

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.
		10. Clean carrier cell load belt Scrub belt using soft bristle brush and soapy water; wipe dry					
	8.	**Indicator lights.** Check all indicator lights using the lamp test command in FMPCS	3+.5**	09			
	9.	**Chute stack lights.** Activate the Chute Disable switch for each chute and ensure the appropriate stack light comes on. Return the switch to the Enabled position.	1.2**	09			
	10.	**Proximity switch.** Check Equipment Present Proximity Switch on each chute. Ensure the indicator light on the sensor changes state as the proximity switch is blocked and unblocked.	1**	09			
SYSTEM	11.	**Clean up.** Ensure all tools, lubricants, rags, etc., are removed from the work area. Report all deficiencies to supervisor.	3	07			

	12.	**Perform checks prior to operational start up.**
		
		1. With the sorter powered up but not running, actuate any E-Stop and verify actuation on the FMPCS Graphical System Interface.
		
		2. Reset the system to clear the E-Stop.
		
		3. Start sorter, ensuring that all audible and visual safety alarms are operational.
		
		4. Check all induction stations to ensure operation. On each station :
		
		  a. The Operator Display Panel should indicate:
		
		    1) IU Stopped
		
		    2) Sorter Running
		
		  b. Place Auto/Manual switch in Auto mode.
		
		  c. Activate the Reset button.
		
		  d. Activate the Run button.
			3+.5*	09			

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

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U.S. Postal Service / **Maintenance Checklist**

IDENTIFICATION

WORK CODE: 0 3

EQUIPMENT ACRONYM: C B S

CLASS CODE: A A

NUMBER: 0 0 2

TYPE: M

Equipment Nomenclature: Rapistan Cross Belt Sorter

Equipment Model:

Bulletin Filename: mm14028

Occurrence: Weekly

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		e. Induction unit belts should sequentially start.					
		f. The Operator Display Panel should now indicate:					
		1) IU Running					
		2) Sorter Running					
		5. Check belt tracking on all belts. Ensure belt is centered and does not wander.					
	13.	**Restore equipment to service**. Restore equipment to operational service. Report all deficiencies to supervisor.	3	07			

U.S. Postal Service **Maintenance Checklist**		IDENTIFICATION											
		WORK CODE	EQUIPMENT ACRONYM						CLASS CODE		NUMBER		TYPE
		0 3	C	B	S				A	A	0 0 2		M
Equipment Nomenclature Rapistan Cross Belt Sorter		Equipment Model				Bulletin Filename mm14028			Occurrence Weekly				

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

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ATTACHMENT 4

CBS MONTHLY MASTER CHECKLIST

03-CBS-AA-003-M

Multipliers:

* Items are multiplied by the number of induction stations

** Items are multiplied by the number of LIM Modules

U.S. Postal Service **Maintenance Checklist**	IDENTIFICATION									
	WORK CODE		EQUIPMENT ACRONYM				CLASS CODE		NUMBER		TYPE
	0	3	C	B	S				A	A	0	0	3	M

Equipment Nomenclature Rapistan Cross Belt Sorter	Equipment Model	Bulletin Filename mm14028	Occurrence Monthly

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.
SAFETY STATEMENT	1.	**COMPLY WITH ALL SAFETY PRECAUTIONS.** **Disconnect power and apply lockouts when required by this instruction. Refer to current local lockout procedures to properly shut down and lock out this machine. Open equipment and inspect dust conditions. Check for suspicious dust or unusual debris. If any unusual substance is found, notify supervisor prior to proceeding with any further action on the equipment.** **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 supervisor immediately upon detection.** **WARNING FOR EWP/PPE.** **Steps contained in this bulletin may require the use of Personal Protective Equipment (PPE). Refer to the current Electrical Work Plan (EWP) MMO for appropriate PPE and barricade requirements.**	1	ALL			
SYSTEM	2.	**Power down and lock out power.** **WARNING** **Steps contained in this bulletin require the use of Personal Protective Equipment (PPE). Refer to the current Electrical Work Plan (EWP) for appropriate PPE and barricade requirements.** Power down and lock out power as prescribed by the current local lockout instructions providing lockout/restore procedures.	25	07			

U.S. Postal Service	IDENTIFICATION												
Maintenance Checklist	WORK CODE	EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
	0	3	C	B	S				A	A	0	0	3	M

Equipment Nomenclature	Equipment Model	Bulletin Filename	Occurrence
Rapistan Cross Belt Sorter		mm14028	Monthly

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.
	3.	**Encoder.** Wipe clean encoder window using a dry, clean, lint free cloth. Do not use any cleaners or chemicals on the window.	60	07			
	4.	**Cell test station.** Verify proper spacing of the cell test station antenna. Gap between carrier cell and antenna should be 9.9mm. See Rapistan Systems Functional Description page FD 28 for additional information.	2	09			
	5.	**Clean and check induction stations.** 1. Remove side covers and clean internal areas using HEPA filter vacuum. 2. Clean induction station belts using a HEPA filter vacuum and brush to remove accumulated dirt and debris. 3. Clean between and under induction stations. 4. Scrub all induction belts with soft bristle brush and soapy water; wipe dry. 5. Drive belt tension and alignment (all belts except 45 degree belt): a. Remove the drive cover. b. Check the alignment of the drive and driven sprockets using a straight edge. Loosen the set screws on the taper-lock bushings, align sprockets, and re-tighten set screws as required. c. Check the tension on the drive belt. When properly tensioned, the belt will deflect 3/16-inch (+/-1/32-inch) when 3 to 4 pounds of force is applied perpendicular to the belt at the midpoint of the span between the sprockets. **NOTE** The deflecting device must be at least as wide as the belt.	75*	07			

U.S. Postal Service **Maintenance Checklist**		IDENTIFICATION											
		WORK CODE	EQUIPMENT ACRONYM					CLASS CODE		NUMBER			TYPE
		0 3	C	B	S			A	A	0	0	3	M
Equipment Nomenclature Rapistan Cross Belt Sorter		Equipment Model				Bulletin Filename mm14028				Occurrence Monthly			

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.
		NOTE Over-tensioning the drive belt will cause excessive belt stretching, wear, and possible belt failure. See the Rapistan Systems Preventive Maintenance Manual for adjustment procedures if necessary. 6. Replace/Secure all covers.					
	6.	**45-Degree belt tension and alignment.** Check the 45-degree belt alignment using the procedure from the Rapistan Systems Preventive Maintenance Manual, page PM 07.	15*	09			
	7.	**Clean up**. Ensure all tools, lubricants, rags, etc., are removed from the work area.	3	07			
SYSTEM	8.	**Restore equipment to service**. Restore equipment to service as prescribed by the current local procedure providing lockout/restore procedures.	20	07			
MAIN SORTER	9.	**Enroute Encoding Scanning System (EESS).** Perform a restart of the EESS.	2	09			
	10.	**Perform checks prior to operational start up.** 1. With the sorter powered up but not running, actuate any E-Stop and verify actuation on the FMPCS Graphical System Interface. 2. Reset the system to clear the E-Stop. 3. Start sorter, ensuring that all audible and visual safety alarms are operational. 4. Check all induction stations to ensure operation. On each station : a. The Operator Display Panel should indicate: 1) IU Stopped 2) Sorter Running b. Place Auto/Manual switch in Auto mode.	3+.5*	09			

U.S. Postal Service **Maintenance Checklist**	IDENTIFICATION											
	WORK CODE		EQUIPMENT ACRONYM					CLASS CODE		NUMBER		TYPE
	0	3	C	B	S			A	A	0	0 3	M

Equipment Nomenclature Rapistan Cross Belt Sorter	Equipment Model	Bulletin Filename mm14028	Occurrence Monthly

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.
		c. Activate the Reset button. d. Activate the Run button. e. Induction unit belts should sequentially start. f. The Operator Display Panel should now indicate: 1) IU Running 2) Sorter Running 5. Check belt tracking on all belts. Ensure belt is centered and does not wander.					
	11.	**Restore equipment to service.** Restore equipment to operational service. Report all deficiencies to supervisor.	3	07			

U.S. Postal Service **Maintenance Checklist**	IDENTIFICATION												
	WORK CODE	EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
	0	3	C	B	S				A	A	0	0	3	M

Equipment Nomenclature Rapistan Cross Belt Sorter	Equipment Model	Bulletin Filename mm14028	Occurrence Monthly

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

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ATTACHMENT 5

CBS QUARTERLY MASTER CHECKLIST

03-CBS-AA-004-M

Multipliers:

* Items are multiplied by the number of induction stations

** Items are multiplied by the number of LIM Modules

U.S. Postal Service **Maintenance Checklist**	IDENTIFICATION											
	WORK CODE	EQUIPMENT ACRONYM						CLASS CODE		NUMBER		TYPE
	0	3	C	B	S				A	A	0	0	4	M

Equipment Nomenclature Rapistan Cross Belt Sorter	Equipment Model	Bulletin Filename mm14028	Occurrence Quarterly

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.
SAFETY STATEMENT	1.	**COMPLY WITH ALL SAFETY PRECAUTIONS. Disconnect power and apply lockouts when required by this instruction. Refer to current local lockout procedures to properly shut down and lock out this machine. Open equipment and inspect dust conditions. Check for suspicious dust or unusual debris. If any unusual substance is found, notify supervisor prior to proceeding with any further action on the equipment.** **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 supervisor immediately upon detection.** **WARNING FOR EWP/PPE.** **Steps contained in this bulletin may require the use of Personal Protective Equipment (PPE). Refer to the current Electrical Work Plan (EWP) MMO for appropriate PPE and barricade requirements.**	1	ALL			
SYSTEM	2.	**Power down and lock out power.** **WARNING** **Steps contained in this bulletin require the use of Personal Protective Equipment (PPE). Refer to the current Electrical Work Plan (EWP) for appropriate PPE and barricade requirements.** Power down and lock out power as prescribed by the current local lockout instructions providing lockout/restore procedures.	25	07			

U.S. Postal Service **Maintenance Checklist**		IDENTIFICATION										
		WORK CODE	EQUIPMENT ACRONYM					CLASS CODE		NUMBER		TYPE
		0 3	C	B	S			A	A	0 0	4	M
Equipment Nomenclature Rapistan Cross Belt Sorter		Equipment Model				Bulletin Filename mm14028			Occurrence Quarterly			

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.
INDUCTION STATION	3.	**Inspect and lubricate**. 1. Perform this step in conjunction with the Monthly Induction Station Clean and Inspect task. 2. Check all grease fittings, add grease if necessary. Do not apply grease to sealed bearings.	10*	07			
MAIN SORTER	4.	**Clean cabinets**. 1. Clean inside of CC cabinets. 2. Clean inside of TVD cabinets. 3. Clean inside of LIM cabinets. 4. Clean inside of DCP cabinets. 5. Remove and replace filters from all DCP boxes and LIM boxes. 6. Vacuum dirty filters with HEPA filter vacuum. 7. Clean FMPCS computer filter.	180	09			
	5.	**Linear induction motor (LIM)**. Clean LIM cooling fans and heat sinks.	20**	09			
	6.	**Clean up**. Ensure all tools, lubricants, rags, etc., are removed from the work area. Report all deficiencies to supervisor.	3	07			
	7.	**Restore power**. Restore equipment to service as prescribed by the current local procedure providing lockout/restore procedures.	20	07			
	8.	**Re-centering.** Perform re-centering alignment in accordance with the Rapistan Systems Diagnostic Manual page 34.	30	09			
FMPCS	9.	**FMPCS backup**. Perform a backup of FMPCS Site Data.	10	10			

U.S. Postal Service **Maintenance Checklist**		IDENTIFICATION								
		WORK CODE	EQUIPMENT ACRONYM				CLASS CODE		NUMBER	TYPE
		0 3	C B S				A A		0 0 4	M
Equipment Nomenclature Rapistan Cross Belt Sorter		Equipment Model			Bulletin Filename mm14028			Occurrence Quarterly		

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

SYSTEM	10.	**Perform checks prior to operational start up.**
		
		 1. With the sorter powered up but not running, actuate any E-Stop and verify actuation on the FMPCS Graphical System Interface.
		
		 2. Reset the system to clear the E-Stop.
		
		 3. Start sorter, ensuring that all audible and visual safety alarms are operational.
		
		 4. Check all induction stations to ensure operation. On each station :
		
		    a. The Operator Display Panel should indicate:
		
		      1) IU Stopped
		
		      2) Sorter Running
		
		    b. Place Auto/Manual switch in Auto mode.
		
		    c. Activate the Reset button.
		
		    d. Activate the Run button.
		
		    e. Induction unit belts should sequentially start.
		
		    f. The Operator Display Panel should now indicate:
		
		      1) IU Running
		
		      2) Sorter Running
		
		 5. Check belt tracking on all belts. Ensure belt is centered and does not wander.
			3+.5*	09			

	11.	**Restore equipment to service**. Restore equipment to operational service. Report all deficiencies to supervisor.	3	07			

ATTACHMENT 6

CBS SEMIANNUAL MASTER CHECKLIST

03-CBS-AA-005-M

Multipliers:

* Items are multiplied by the number of induction stations

** Items are multiplied by the number of LIM Modules

U.S. Postal Service **Maintenance Checklist**		IDENTIFICATION											
		WORK CODE		EQUIPMENT ACRONYM					CLASS CODE		NUMBER		TYPE
		0	3	C	B	S			A	A	0	0	5	M

Equipment Nomenclature Rapistan Cross Belt Sorter	Equipment Model	Bulletin Filename mm14028	Occurrence Semi-Annual

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.
SAFETY STATEMENT	1.	**COMPLY WITH ALL SAFETY PRECAUTIONS. Disconnect power and apply lockouts when required by this instruction. Refer to current local lockout procedures to properly shut down and lock out this machine. Open equipment and inspect dust conditions. Check for suspicious dust or unusual debris. If any unusual substance is found, notify supervisor prior to proceeding with any further action on the equipment.** **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 supervisor immediately upon detection.** **WARNING FOR EWP/PPE.** **Steps contained in this bulletin may require the use of Personal Protective Equipment (PPE). Refer to the current Electrical Work Plan (EWP) MMO for appropriate PPE and barricade requirements.**	1	07			
SYSTEM	2.	**Power down and lock out power.** **WARNING** **Steps contained in this bulletin require the use of Personal Protective Equipment (PPE). Refer to the current Electrical Work Plan (EWP) for appropriate PPE and barricade requirements.** Power down and lock out power as prescribed by the current local lockout instructions providing lockout/restore procedures.	25	07			

U.S. Postal Service	IDENTIFICATION										
Maintenance Checklist	WORK CODE	EQUIPMENT ACRONYM					CLASS CODE		NUMBER		TYPE
	0	3	C	B	S			A	A	0 0 5	M

Equipment Nomenclature	Equipment Model	Bulletin Filename	Occurrence
Rapistan Cross Belt Sorter		mm14028	Semi-Annual

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.
MAIN SORTER	3.	**Carrier pitch**. Inspect the carrier pitch with sorter stopped. Make sure that the carrier train is straight and not zigzagging. Check this on a straight track section. Observe the carrier cells on a curve. If carrier cell guide wheels are running against outside of curve, adjust (shorten) the carrier pitch as required. Refer to Crossbelt Sortation System Training Manual, Preventive Maintenance, pages PM24-25.	180	10			
	4.	**LIM clearance**. Inspect the clearances between the LIM drive units (Primary) and the lowest carrier (Secondary). Identify this carrier as the Reference Carrier (RC). If the clearance between each LIM Primary and RC LIM Secondary is not between 0.100 and 0.140 inches (2.5 to 3.5 mm), adjust the height of the appropriate LIM drive unit. Refer to Crossbelt Sortation System Training Manual, Preventive Maintenance, pages PM26-27.	720	09			
	5.	**LIM safety device flag - clearance**. Inspect the clearances between each LIM safety device flag and the RC LIM Secondary. If the clearance is not .050+/- .01 inches (1.25+/- .025mm) across the width of the carrier, adjust the height of the flag. Refer to Crossbelt Sortation System Training Manual, Preventive Maintenance, pages PM27-28.	18**	09			
	6.	**Inspect power rails / clean sorter belly pans**. 1. Remove four support screws from belly pan. 2. Remove the pan. Inspect for broken brushes or other components or metal shavings. Clean pan with vacuum. 3. Inspect area above pan for any foreign objects or damage. 4. Inspect the Power Rails. 5. Inspect Rail Holders for cracks or damage.	75**	09			

U.S. Postal Service **Maintenance Checklist**	IDENTIFICATION											
	WORK CODE	EQUIPMENT ACRONYM						CLASS CODE		NUMBER		TYPE
	0 3	C	B	S				A	A	0 0	5	M

Equipment Nomenclature Rapistan Cross Belt Sorter	Equipment Model	Bulletin Filename mm14028	Occurrence Semi-Annual

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.
		NOTE Spacing between holders should be no more than 40" in straight sections, 20" – 40" in curves and no more than 8" from each side of Isolator. 6. Inspect Isolators 7. Inspect visible Carrier Cell brushes. 8. Reinstall pan and support screws.					
SYSTEM	7.	**Clean up.** Ensure all tools, lubricants, rags, etc., are removed from the work area. Report all deficiencies to supervisor.	3	07			
	8.	**Restore power.** Restore equipment to service as prescribed by the current local procedure providing lockout/restore procedures.	20	07			
	9.	**Perform checks prior to operational start up.** 1. With the sorter powered-up but not running, actuate any E-Stop and verify actuation on the FMPCS Graphical System Interface. 2. Reset the system to clear the E-Stop. 3. Start sorter, ensuring that all audible and visual safety alarms are operational. 4. Check all induction stations to ensure operation. On each station : a. The Operator Display Panel should indicate: 1) IU Stopped 2) Sorter Running b. Place Auto/Manual switch in Auto mode. c. Activate the Reset button. d. Activate the Run button. e. Induction Unit Belts should sequentially start.	3+.5*	09			

U.S. Postal Service **Maintenance Checklist**		IDENTIFICATION											
		WORK CODE		EQUIPMENT ACRONYM				CLASS CODE		NUMBER			TYPE
		0	3	C	B	S				A	A	0	0	5	M

Equipment Nomenclature Rapistan Cross Belt Sorter	Equipment Model	Bulletin Filename mm14028	Occurrence Semi-Annual

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.
		f. The Operator Display Panel should now indicate: 1) IU Running 2) Sorter Running 5. Check belt tracking on all belts. Ensure belt is centered and does not wander.					
	10.	**Restore equipment to service.** Restore equipment to operational service. Report all deficiencies to supervisor.	3	07			

U.S. Postal Service **Maintenance Checklist**		IDENTIFICATION											
		WORK CODE		EQUIPMENT ACRONYM					CLASS CODE		NUMBER		TYPE
		0	3	C	B	S			A	A	0 0	5	M

Equipment Nomenclature Rapistan Cross Belt Sorter	Equipment Model	Bulletin Filename mm14028	Occurrence Semi-Annual

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

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ATTACHMENT 7

CBS OPERATIONAL MAINTENANCE CHECKLIST

09-CBS-AA-001-M

U.S. Postal Service **Maintenance Checklist**	IDENTIFICATION											
	WORK CODE	EQUIPMENT ACRONYM						CLASS CODE		NUMBER		TYPE
	0	9	C	B	S				A	A	0	0	1	M

Equipment Nomenclature Rapistan Cross Belt Sorter	Equipment Model	Bulletin Filename mm14028	Occurrence Tourly

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.
OPERATIONAL MAINTENANCE	1.	**COMPLY WITH ALL SAFETY PRECAUTIONS. Disconnect power and apply lockouts when required by this instruction. Refer to current local lockout procedures to properly shutdown and lockout this machine. Open equipment and inspect dust conditions. Check for suspicious dust or unusual debris. If any unusual substance is found, notify supervisor prior to proceeding with any further action on the equipment.** **THE USE OF COMPRESSED OR BLOWN AIR IS PROHIBITED. When cleaning is required, an alternative cleaning method such as a HEPA filtered vacuum cleaner or a damp rag must be used in place of compressed or blown air. A lint-free cloth or brush may be used on optical equipment only when other cleaning methods cannot be used. Report safety deficiencies to supervisor immediately upon detection.** **WARNING FOR EWP/PPE: Steps contained in this bulletin may require the use of Personal Protective Equipment (PPE). Refer to the current Electrical Work Plan (EWP) MMO for appropriate PPE and barricade requirements.**	1	All			
FMPCS REPORTS:	2.	**Generate and review reports**. Analyze data provided on the following reports to determine if any areas of the machine are degrading or need attention. Reports can be selected through the FMPCS menu system or requested at the command line. 1. Review Volume Report. Look for high number occurrences of Induction failure, Missent, Induction Unit Problems, or Discharge Problems or failures. 2. Review Tray Status Report. Look for stranded loads, Out of Service cells, or Right/Left movement problems. 3. Review Condition Report. Look for Not Operational, Out of Service, Failing, or Down equipment.	30	10			

U.S. Postal Service **Maintenance Checklist**			IDENTIFICATION								
		WORK CODE	EQUIPMENT ACRONYM					CLASS CODE		NUMBER	TYPE
		0 9	C B S					A A		0 0 1	M
Equipment Nomenclature Rapistan Cross Belt Sorter		Equipment Model				Bulletin Filename mm14028			Occurrence Tourly		

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.
		4. Review Maintenance Report. Look for high number occurrences of problems or failures. 5. Review current message log.					
SENSOR: TRACKING (DVS, IVS, LVS)	3.	**Run FMPCS maintenance sensor tests**. Run sensor test for each sorter tracking sensor (observe test results on message log). The location of mail on the trays or tray state must be known to determine correct test results.	5	10			
DISCHARGE:	4.	**Run FMPCS maintenance discharge tests.** Run discharge unit test for any discharge showing a high failure rate in the maintenance report.	10	10			
INDUCTION UNIT:	5.	**Check induction unit**. Observe condition of the induction unit (belting, controls).	1*	09			
	6.	**Check induction**. Observe induction of parcel onto the sorter; ensure parcel is hitting the correct carrier cell.	1*	09			
INDUCTION UNIT: SCANNER	7.	**Check scanner**. Verify scanners ability to read bar code.	1*	09			
RE-CENTERING STATION	8.	**Check re-centering stations**. Verify re-centering stations are functional.	2	09			
SORTER	9.	**Package loading.** Observe the inductions of packages onto the carrier cells from one induction station for three revolutions of the sorter. Packages not inducted onto the belt of the carrier cell or significant changes in the package placement onto the cell may indicate a sorter pitch problem, which requires further investigation.	.6**	09			

U.S. Postal Service **Maintenance Checklist**		IDENTIFICATION										
		WORK CODE	EQUIPMENT ACRONYM					CLASS CODE		NUMBER		TYPE
		0 9	C	B	S			A	A	0 0	1	M
Equipment Nomenclature Rapistan Cross Belt Sorter		Equipment Model				Bulletin Filename mm14028			Occurrence Tourly			

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.
	10.	**Check sorter**. 1. Walk entire length of the machine under the sorter and around the chutes. Ensure proper operation of all components; listen for unusual noises, pay special attention to the area of the LIM motors and fans. 2. Clear nets of debris and parcels; return mail to the appropriate mail stream for processing. 3. Ensure nets are attached to the support cables. 4. Verify that net support cables are attached to brackets and the brackets are not bent or damaged.	1.2**	09			
	11.	**Carrier cell test station.** Verify proper operation of the cell test station. Display should change as carrier cell tests are performed.	3	09			
	12.	**Enroute Encoding Scanning System (EESS)**. While the machine is operating, check the display on the EESS E-Box to ensure: 1. The Date/Time is correct. 2. DCS is connected. 3. Counter is incrementing as packages pass by.	3	07			
	13.	**Package Sorter Overhead Camera (PSOC).** 1. Ensure PSOC is on line and functioning properly. Display should indicate: "Ready, FMPCS Connected" 2. Check the read rate and ensure it matches the expected read rate of the mail being processed.	3	10			
REPORT	14.	**Report deficiencies**. Report all deficiencies to supervisor.	3	07			