MAINTENANCE TECHNICAL SUPPORT CENTER **HEADQUARTERS MAINTENANCE OPERATIONS**





Maintenance Management Order

SUBJECT: Operational and Preventive Maintenance

Guidelines for High Speed Tray Sorters

(HSTS)

NO: MMO-025-16

FILE CODE: B1 TO: All HSTS Sites

pmur:mm14155ad

DATE: March 23, 2016

	Online Change Record													
Change #	Date	Description of Change												
1 4/9/2024 Inserted new Attachment 6, Master Checklist 03-HSTS-AA-														
		006-M – Annual PM. Previous attachment 6 is now												
Attachment 7.														

This Maintenance Management Order (MMO) provides Operational and Preventive Maintenance Guidelines for the HSTS. This MMO supersedes MMO-045-14 and MMO-118-13. This bulletin applies to Acronym HSTS, Class Code 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.

Preventive Maintenance (PM) guidelines provide maintenance employees with the recommended task based recommended maintenance activities. The complete master PM checklist should be accessible to all maintenance employees when performing PM activities.

Maintenance Managers are to use these preventive maintenance guidelines when preparing the route sheets for local maintenance personnel. It is the responsibility of each Maintenance Manager to ensure all WARNINGS, CAUTIONS, and NOTES are included with each applicable task as part of the preparation of any local route sheets.

WARNING

Various products requiring Material 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 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.

Kevin Couch Manager

Maintenance Technical Support Center

HQ Maintenance Operations

- Summary of Workload Estimate
- 2. Master Checklist 03-HSTS-AA-002-M Weekly PM
- 3. Master Checklist 03-HSTS-AA-003-M Monthly PM
- Master Checklist 03-HSTS-AA-004-M Quarterly PM
- 5. Master Checklist 03-HSTS-AA-005-M Bi-Annual PM
- 6. Master Checklist 03-HSTS-AA-006-M Annual PM
- 7. Master Checklist 09-HSTS-AA-001-M Operational Maintenance

ATTACHMENT 1

SUMMARY

WORKLOAD ESTIMATE

FOR HIGH SPEED TRAY SORTER

SUMMARY

WORKLOAD ESTIMATE FOR HIGH SPEED TRAY SORTER

NOTE

Because this equipment may vary in size, the workload estimate cannot be provided in a traditional roll-up table. For this guideline, the annual work hours are derived from local site specific entries made in an electronic Work Hour Estimator Program (eWHEP) worksheet. Refer to eWHEP for further guidance.

ATTACHMENT 2 HIGH SPEED TRAY SORTER MASTER CHECKLIST

03-HSTS-AA-002-M

Weekly Time Total: 22 Minutes

U.S. Postal Service	IDENTIFICATION															
Maintanana Obsaldiat	_	PK			_		MEN				CLA		N	JMBE	ĒR	TYPE
Maintenance Checklist	CODE ACRONYM										CO	DE				
	0	3	Н	S	Т	S					Α	Α	0	0	2	М
Equipment Nomenclature High Speed Tray Sorter	Equipment Model HSTS							В	ulletin N	name 4155		•	Y			

Part or	Item	Task Statement and Instruction	Est.	Min.		Threshold	s
Component	No	(Comply with all current safety precautions)	Time Req (min)	Skill Lev	Run Hours	Pieces Fed (000)	Time Period
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, a damp cloth, lint-free cloth, or brush, must be used in place of compressed or blown air. Report safety deficiencies to your supervisor immediately upon detection. WARNING FOR EWP/PPE: Steps contained in this bulletin may require the use of Electrical Work Plan (EWP) Personal Protective Equipment (PPE). Refer to the current EWP MMO for appropriate EWP PPE and barricade requirements.	1	All			
SYSTEM	2.	WARNING Be cautious when working around or on equipment when power has been applied. System Computer. Observe operator screen for any fault messages or abnormal indications.	1	9			
START UP	3.	 Observe Warning Horn and Beacons. Activate E-Stop. Ensure motors stop and proper visual and audible notifications are observed. Reset E-Stop. Restart system, watch for proper operation of warning horn and beacons on system start-up. 	4	9			

U.S. Postal Service								IDE	NTIF	CATI	ON					
Maintenance Checklist	_	RK					MENT				CLA		N	JMBE	R	TYPE
Maintenance Checkiist	CO	CODE ACRON									CO	DE				
	0	3	H S T S								A A		0	0	2	М
Equipment Nomenclature High Speed Tray Sorter	Equipment Model HSTS							Bulletin Filename MM14155						EKL	Y	
rlight Speed Tray Softer	ПОТО															

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time	Min. Skill		Threshold	S
Component	NO	(Comply with all current salety precautions)	Req (min)	Lev	Run Hours	Pieces Fed (000)	Time Period
LOCK OUT	4.	Power Down and Lock Out Power.	10	7			
		WARNING					
		Electrical power will always be present at the input of the disconnect device unless the circuit is disabled at the facility power distribution panel located at					
		Power down the machine and lock out its electrical power as prescribed by the current local lockout instructions providing lockout/restore procedures.					
BARCODE READERS	5.	Barcode Readers. WARNING	2	7			
		Shut down the camera system before performing this maintenance task. Do not stare into the camera's window at the laser / LED light. Avoid direct eye exposure. The laser / LED light level does not constitute a health hazard, however staring at the laser / LED light for prolonged periods could result in eye damage.					
		CAUTION					
		Do not use any chemical on the camera that is unsafe for plastics, such as benzene, acetone, or similar products.					
		Using a dry, soft, lint-free cloth, remove any dust from the camera window.					
RETURN TO	6.	Power Up HSTS System.	3	9			
SERVICE		1. Power up preparation.					
		 Ensure tools and materials are removed from work area. 					
		b. Replace all machine panels.					
		c. Close all machine doors and covers.					

U.S. Postal Service	IDENTIFICATION															
Maintanana Obsaldiat	_	PK			_		MEN				CLA		N	JMBE	ĒR	TYPE
Maintenance Checklist	CODE ACRONYM										CO	DE				
	0	3	Н	S	Т	S					Α	Α	0	0	2	М
Equipment Nomenclature High Speed Tray Sorter	Equipment Model HSTS							В	ulletin N	name 4155		•	Y			

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time	Min. Skill		Threshold	S
Сотронен	NO	(Comply with all current safety precautions)	Req (min)	Lev	Run Hours	Pieces Fed (000)	Time Period
		WARNING Be cautious when working around or on equipment when power has been applied. Take precautions to prevent hair, clothing, tools, and test equipment from being caught in moving parts. 2. Restore power to equipment as prescribed by current local procedure providing lockout/ restore procedures. 3. Restart System in accordance with manufacturer's guideline.					
CLEAN UP	7.	Clean Up. Ensure all tools, lubricants, rags, etc., are removed from the work area. Notify supervisor of any deficiencies.	1	All			

ATTACHMENT 3 HIGH SPEED TRAY SORTER MASTER CHECKLIST

03-HSTS-AA-003-M

Monthly Time Total: 135 Minutes + 5.7 Minutes per Transfer Assembly

U.S. Postal Service	IDENTIFICATION															
Maintenance Checklist	_	RK					MENT	•			CLA		N	UMB	ER	TYPE
Maintenance Checkiist	C	DE				<u>ACRC</u>	MYM				CO	DE				
	0	3	Η	S	Т	S					Α	Α	0	0	3	М
Equipment Nomenclature High Speed Tray Sorter	Equ	ipmer		del HST	S		•	В	ulletir N		name 4155			OM	NTHI	_Y

'-							
Part or	Item	Task Statement and Instruction	Est.	Min.		Threshold	S
Component	No	(Comply with all current safety precautions)	Time	Skill	Run	Pieces	Time
·			Req	Lev	Hours	Fed	Period
			(min)			(000)	
SAFETY	1.	COMPLY WITH ALL SAFETY PRECAUTIONS.	1	All			
STATEMENT		Disconnect power and apply lockouts when	•	/			
O 17 (1 E M E I V I		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, a damp cloth, lint-free cloth,					
		or brush, must be used in place of compressed					
		or blown air. Report safety deficiencies to your supervisor immediately upon detection.					
		WARNING FOR EWP/PPE:					
		Steps contained in this bulletin may require the					
		use of Electrical Work Plan (EWP) Personal					
		Protective Equipment (PPE). Refer to the					
		current EWP MMO for appropriate EWP PPE					
		and barricade requirements.					
HIGH SPEED	2.	High Speed Merge.	3	9			
MERGE	۷.	• •	3	9			
		1. Observe High Speed Merge sections for					
		proper operation.					
		2. Observe tray movement for any abnormal					
		indications such as jumps or stalls.					
				1			
SPIRAL	3.	Spirals.	4	9			
CONVEYOR		1. Observe Spiral Conveyor sections for proper					1
		operation.					
		2. Observe tray movement for any abnormal					
		indications such as jumps or stalls.					
		indications cash as jumps of statio.					
RETURN BELT	4.	Return Belt.	4	9			
		Observe return belt for proper operation.					
		2. Observe tray movement for any abnormal indications such as jumps or stalls.					
		indications such as jumps of stalls.					1
AIR SYSTEM	5.	Air System	6	7			-
AIN STOTEW	5.	Air System.	O	′			1
					1		I

U.S. Postal Service								IDE	NTIF	ICAT	ION					
Maintenance Checklist	WC	RK DE			_		MENT NYM	•				ASS DE	N	UMBI	ĒR	TYPE
	0	3	Н	S	Т	S					Α	Α	0	0	3	М
Equipment Nomenclature High Speed Tray Sorter	Equipment Model HSTS										name 4155			1OM	NTH	_Y

Part or	Item	Task Statement and Instruction	Est.	Min.		Thresholds	S
Component	No	(Comply with all current safety precautions)	Time	Skill	Run	Pieces	Time
			Req	Lev	Hours	Fed	Period
			(min)			(000)	
		1. Check main air pressure to ensure it is	+ 2				
		80 psi. Drain water in bowl (if equipped).					
		oo psi. Diani watei iii bowi (ii equipped).	per				
		2. Check the belt take-up air pressure to ensure	TA				
		it is 55-60 psi. Drain water in bowl (if					
		equipped).					
		2 Charle and Transfer Assembly (TA) air					
		3. Check each Transfer Assembly (TA) air					
		pressure to ensure it is 50-60 psi. Drain water					
		in bowls (if equipped). (2 minutes per TA)					
CONVEYORS	6.	Clean Runout Photocells and Verify Operation.	2 (per	7			
32.3	٠.	, ,	TA)	'			
		Using a lint-free cloth, clean the 80% and 100% full	., .,				
		photocells and reflectors. Verify the proper					
		operation of the 80% and 100% full photocells by					
		ensuring the sensor light changes state as it is					
		blocked and unblocked.					
	7.	Check Narrow Belt Conveyor Operation.	11	9			
		Confirm conveyor and pop-ups are performing					
		properly. Load a test sort plan and send a tray to					
		each lane. If you don't have a test sort plan utilize					
		the Sequential Discharge Unit Test.					
	8.	Backups.	18	10			
		Backup MRC decoder to Flash drive.					
		Refer to Accusort MRC Decoder Manual					
		Appendix B (KCMO)					
		Backup FMPCS site data.					
		Refer to MS-158 Volume A, Section 7.2.1.					
COMPUTERS	9.	Power Down and Lock Out Power.	10	7			
		WARNING					
		Electrical power will always be present at					
		the input of the disconnect device unless					
		the circuit is disabled at the facility power					
		distribution panel located at					
		alonibation parior rootion at					
		'					
		Power down the machine and lock out its electrical					
		power as prescribed by the current local lockout					
		instructions providing lockout/restore procedures.					
ROLLER O-RINGS	10.	O-Rings.	74	7			
				1	1	1	<u> </u>

U.S. Postal Service								IDE	NTIF	ICATI	ON					
Maintenance Checklist	WC	RK DE			_		MENT NYM				CLA CO		N	JMBE	R	TYPE
	0	0 3 H S T S							A A				0	0	3	М
Equipment Nomenclature High Speed Tray Sorter	Equipment Model HSTS								ulletin N		name 4155			MON	IHT	_Y

Part or	Item		Task Statement and Instruction	Est.	Min.		Threshold	s
Component	No		(Comply with all current safety precautions)	Time	Skill	Run	Pieces	Time
				Req (min)	Lev	Hours	Fed (000)	Period
		1.	Check for cracks, damage, foreign objects, or					
			missing O-rings.					
		2.	Check tension by pressing against them. O-					
			rings should be pliable but not loose.					
NARROW BELT	11.	Ch	eck the NBS Belt for Wear or Damage.	1.7	9			
SORTER		1.	Check the NBS belt splice for wear or damage.	Per TA				
			a. Examine lower belt guide wheels.					
			b. Look for wear.					
			c. Ensure proper tracking.					
		2.	Examine end pulley and end pulley snubber.					
			a. Look for wear.					
			b. Ensure proper tracking.					
		3.	Examine Rollers.					
			a. Look for foreign objects or dirt build up.					
		4.	Chains and Sprockets.					
			a. Look for wear.					
			b. Ensure proper tracking.					
		5.	Gear boxes.					
			a. Check for leaks or dirt build up.					
		6.	Main Drive Bearings.					
			a. Check bearings, grease if necessary.					
		7.	Gear motor.					
			a. Check oil seals for leaks.					
			b. Check oil level.					
			c. Check for dirt build up.					
		8.	Sorter Transfer Module.					
			a. Inspect housings for debris.					
			b. Check timing belt tension (Drive and Jump belts).					
			c. Verify all tires are still on divert wheels and in good condition.					
			 d. Check to see that all divert wheel O-rings are in place and in good condition. There 					

U.S. Postal Service								IDE	NTIF	ICATI	ON					
Maintenance Checklist	_	RK					MENT				CLA		Νl	JMBE	ER	TYPE
Wallitellance Checklist	CO	DE				ACRO	MYM				CO	DE				
	0	3	Н	S	Т	S					Α	Α	0	0	3	М
Equipment Nomenclature High Speed Tray Sorter	Equipment Model HSTS							В	ulletin N		name 4155			NOM	NTHI	_Y

Part or	Item	Task Statement and Instruction	Est.	Min.		Threshold	s
Component	No	(Comply with all current safety precautions)	Time	Skill	Run	Pieces	Time
			Req (min)	Lev	Hours	Fed	Period
			(111111)			(000)	
		are two O-rings used to drive each divert wheel. One clear O-ring which transmits power from drive roller to lower idler, and one black O-ring which transmits power from lower idler to divert wheel. e. Check to verify NBS belts are properly tracked through lower belt guide wheels and wheels are in good condition. f. Check diverter snubbers and drive rollers					
		for residue and condition.					
RETURN TO	12.	Power Up HSTS System.	3	9			
SERVICE		Power up preparation.					
		Ensure tools and materials are removed from work area.					
		b. Replace all machine panels.					
		c. Close all machine doors and covers.					
		WARNING					
		Be cautious when working around or on equipment when power has been applied. Take precautions to prevent hair, clothing, tools, and test equipment from being caught in moving parts.					
		 Restore power to equipment as prescribed by current local procedure providing lockout/ restore procedures. 					
		Restart Systems in accordance with manufacturer's guideline.					
CLEAN UP	13.	Clean Up. Ensure all tools, lubricants, rags, etc., are removed from the work area. Notify supervisor of any deficiencies.	1	All			

U.S. Postal Service								IDE	NTIF	ICATI	ON					
Maintenance Checklist	_	RK DE					MENT NYM	•			CLA CO	NSS DE	NI	JMBE	₽R	TYPE
	0	3	Н	S	Т	S					Α	Α	0	0	3	М
Equipment Nomenclature High Speed Tray Sorter	Equ	Equipment Model HSTS						В			name 4155			1OM	NTHI	_Y

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

THIS PAGE BLANK

ATTACHMENT 4 HIGH SPEED TRAY SORTER MASTER CHECKLIST

03-HSTS-AA-004-M

Quarterly Time Total: 55 Minutes

U.S. Postal Service								IDE	NTIF	ICATI	ON					
Maintenance Checklist	WC	RK DE			_		MEN ⁻ NYM				_	ASS DE	N	JMBE	ΞR	TYPE
	0	3	Н	S	Т	S	I				A	A	0	0	4	М
Equipment Nomenclature High Speed Tray Sorter	Equipment Model HSTS							Е	Bulletir N		name 4155		C	UAF	RTE	RLY

Tilgit Speed Tray Sc		11313	IVIIVI I 4 I C				
Part or	Item	Task Statement and Instruction	Es			Threshold	ls
Component	No	(Comply with all current safety precautions)	Tim Re (mi	q Lev	D	Pieces Fed (000)	Time Period
SAFETY STATEMENT	1.	equipment and inspect dust condition. Check for suspicious dust or unusual debit any unusual substance is found not supervisor prior to proceeding with any furth action on the equipment. THE USE OF COMPRESSED OR BLOWN All	nen ent hut ben ns. ris. tify her	A	II		
		IS PROHIBITED. When cleaning is required, an alternat cleaning method such as a HEPA filter vacuum cleaner, a damp cloth, lint-free clo or brush, must be used in place of compress or blown air. Report safety deficiencies your supervisor immediately upon detection WARNING FOR EWP/PPE:	red oth, sed to				
		Steps contained in this bulletin may require the use of Electrical Work Plan (EWP) Person Protective Equipment (PPE). Refer to a current EWP MMO for appropriate EWP P and barricade requirements.	nal the				
SYSTEM	2.	 Listen for abnormal noise using airborultrasound detection (UE 10,000 with Lo Range Module (LRM)) Ensure all covers and guards are in place 	ong) 9)		
LOCK OUT	3.	Power Down and Lock Out Power at the Facility Power Distribution Panel.	the 10) 7	,		
		WARNING					
		The following steps include work in the motor controls box. In order to remove all power from the controls box including the input of the disconnect device, the system must be locked out at the facility power distribution panel located at					

U.S. Postal Service								IDE	NTIF	ICAT	ION					
Maintenance Checklist	WC	RK DE			_		MENT NYM					ASS DE	N	UMBI	ĒR	TYPE
			Н	S	Т	S					Α	Α	0	0	4	М
Equipment Nomenclature High Speed Tray Sorter	Equ	ipmer	nt Mo	del HST	s			В			name 4155		C	UAF	RTE	RLY

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time	Min. Skill		Threshold	S
Component	NO	(Comply with all current salety precautions)	Req (min)	Lev	Run Hours	Pieces Fed (000)	Time Period
		Power down the machine and lock out its electrical power as prescribed by the current local lockout instructions providing lockout/restore procedures.					
MOTOR CONTROL	4.	As soon as possible after power down, perform an electrical infrared thermography inspection of motor control cabinets to ensure there are no abnormal heat conditions. 1. Open motor control cabinets 2. Check for overheated (discolored components). 3. Inspect seal. 4. Clean air filter (if present). 5. Ensure contacts are snug. 6. Vacuum if necessary. 7. Secure motor control cabinet panels.	20	9			
RETURN TO SERVICE	5.	Power Up HSTS System. 1. Power up preparation. a. Ensure tools and materials are removed from work area. b. Replace all machine panels. c. Close all machine doors and covers. WARNING Be cautious when working around or on equipment when power has been applied. Take precautions to prevent hair, clothing, tools, and test equipment from being caught in moving parts. 2. Restore power to equipment as prescribed by current local procedure providing lockout/ restore procedures. 3. Restart Systems in accordance with manufacturer's guideline.	3	9			

U.S. Postal Service

Maintenance Technical Support Center

IDENTIFICATION

CLASS NUMBER TYPE

0.5.1 036	II JEI VICE									IDL	-14111		IOIV					
Maintenance	e Check	list		DRK DDE					MENT NYM				_	ASS ODE	NU	JMBE	ĒR	TYPE
			0	3	Н	S	Т	S					Α	Α	0	0	4	М
	Equipment Nomenclature High Speed Tray Sorter					del HS7	S			В	Bulletin N		name 4155		Q	UAF	RTER	LY
Part or Component	(State				ction ecaution	ons)			Est. Time	Min. Skill			eshold		
		Ì								ŕ			Req (min)	Lev	Run Hours	F	eces ed 000)	Time Period
CLEANUD	6	Clean III	<u> </u>	'n 0 1 11	الم ما	too	ام ا	brio	anta	_	1	All		1				
CLEAN UP	6.		n Up. Ensure all tools, lubricants, rags, et emoved from the work area. Notify supervis											All				

of any deficiencies.

N	I٨	ΛС	1_(വാ	5.	.1	R
w	и۱	/11	<i>)</i> – 1	1/	:)-		()

U.S. Postal Service								IDE	NTIF	CATI	ON					
	WC	RK			Е	QUIF	MENT	•			CLA	ASS	N	JMBE	ĒR	TYPE
Maintenance Checklist	CO	DE				ACRO	MYM				CO	DE				
	0 3 H		Н	S	Т	S					Α	Α	0	0	5	М
Equipment Nomenclature	Equ	ipmer	nt Mo					В	ulletin					۸r	nua	
High Speed Tray Sorter		HSTS							Λ	/M1	4155			ΛI	iiiua	

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

ATTACHMENT 5 HIGH SPEED TRAY SORTER MASTER CHECKLIST

03-HSTS-AA-005-M

Bi-Annual Time Total: 54 minutes

U.S. Postal Service								IDE	NTIF	ICATI	ON					
Maintenance Checklist	_	ORK ODE					MENT NYM	•			_	ASS DE	N	JMBE	ΞR	TYPE
	0	3	Н	S	Т	S					Α	Α	0	0	6	М
Equipment Nomenclature High Speed Tray Sorter	Equipment Model HSTS					В	ulletir N		name 4155			ANI	NUA	L		

Part or	Item	Task Statement and Instruction	Est.	Min.		Threshold	s
Component	No	(Comply with all current safety precautions)	Time	Skill	Run	Pieces	Time
			Req	Lev	Hours	Fed	Period
			(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. 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, a damp cloth, lint-free cloth,					
		or brush, must be used in place of compressed					
		or blown air. Report safety deficiencies to					
		your supervisor immediately upon detection.					
		WARNING FOR EWP/PPE:					
		Steps contained in this bulletin may require					
		the use of Electrical Work Plan (EWP) Personal					
		Protective Equipment (PPE). Refer to the					
		current EWP MMO for appropriate EWP PPE					
		and barricade requirements.					
LOCK OUT	2.	Power Down and Lock Out Power.	10	7			
		WARNING					
		WARNING					
		Electrical power will always be present					
		at the input of the disconnect device					
		unless the circuit is disabled at the					
		facility power distribution panel located					
		at					
		Power down the machine and lock out its electrical					
		power as prescribed by the current local lockout					
		instructions providing lockout/restore procedures.					
	1					l	L

U.S. Postal Service								IDE	NTIF	ICAT	ION					
Maintenance Checklist	ecklist WORK CODE						MENT NYM	•				ASS DE	N	UMBI	ĒR	TYPE
	0	3	Н	S	Т	S					Α	Α	0	0	6	М
Equipment Nomenclature High Speed Tray Sorter	Equ	ipmer	nt Mo	del HST	s			В			name 4155			AN	NUA	L

Part or	Item	Task Statement and Instruction	Est.	Min.		Threshold	S
Component	No	(Comply with all current safety precautions)	Time Req (min)	Skill Lev	Run Hours	Pieces Fed (000)	Time Period
		WARNING Discard or dispose of chemical soaked materials according to SDS and in accordance with local procedures.					
MAIN DRIVE	3.	Check Main Drive.	37	9			
		1. Grease bearings if necessary.					
		2. Change gear case oil, 3.1 quarts capacity in each gear box.					
		a. Drain and properly dispose of old oil.					
		b. Install new oil.					
		 Mineral Oil based lubrication, Viscosity VG220 (Mobilgear 630, Shell Omala 220 or equivalent) 					
		or					
		 Synthetic lube (Mobilgear SHC630 or equivalent) 					
RETURN TO	4.	Power Up HSTS System.	3	9			
SERVICE		1. Power up preparation.					
		 Ensure tools and materials are removed from work area. 					
		b. Replace all machine panels.					
		c. Close all machine doors and covers.					
		WARNING					
		Be cautious when working around or on equipment when power has been applied. Take precautions to prevent hair, clothing, tools, and test equipment from being caught in moving parts.					
		 Restore power to equipment as prescribed by current local procedure providing lockout/ restore procedures. 					
		Restart Systems in accordance with manufacturer's guideline.					

U.S. Postal Service

Maintenance Technical Support Center

Maintenand	Maintenance Checklist			DRK DDE					MEN I ONYM		_	LASS ODE	NU	JMBER	TYPE
			0	3	Н	S	Т	S			Α	Α	0	0 6	М
	quipment Nomenclature ligh Speed Tray Sorter				nt Mo	del HS1	ſS			Bulletir N	name 4155			ANNUA	\L
Part or Component	Item No	(Task Statement and Instruction (Comply with all current safety precautions)							Est. Time Req (min)	Min. Skill Lev	Run Hours	Threshol Pieces Fed (000)	ds Time Period	
CLEAN UP	5.		n Up. Ensure all tools, lubricants, rags, etcemoved from the work area. Notify superviso						3	All					

of any deficiencies.

ATTACHMENT 6 HIGH SPEED TRAY SORTER MASTER CHECKLIST PREVENTIVE MAINTENANCE

03-HSTS-AA-006-M

Time Total: 37 Minutes

							IDE	NTIF	CATI	ON					
_							•			_		N	JMBE	ER	TYPE
CO	DE			- 1	ACRU	MYM				CO	DE				
0	3	Н	S	Т	S					Α	Α	0	0	6	М
Equ						•	В					•	AN	NUA	L
	0	0 3	0 3 H	CODE 0 3 H S Equipment Model	CODE	CODE ACRO 0 3 H S T S Equipment Model	CODE ACRONYM 0 3 H S T S I Equipment Model	WORK CODE EQUIPMENT ACRONYM 0 3 H S T S Equipment Model B	WORK CODE EQUIPMENT ACRONYM 0 3 H S T S Equipment Model Bulletin	WORK CODE EQUIPMENT ACRONYM 0 3 H S T S Bulletin Filer Equipment Model Bulletin Filer	CODE ACRONYM CO 0 3 H S T S A Equipment Model Bulletin Filename	WORK CODE EQUIPMENT ACRONYM CLASS CODE 0 3 H S T S A A A Equipment Model Bulletin Filename Bulletin Filename Bulletin Filename Bulletin Filename	WORK CODE EQUIPMENT ACRONYM CLASS CODE NI CODE 0 3 H S T S A A O Equipment Model Bulletin Filename Bulletin Filename Bulletin Filename Bulletin Filename	WORK CODE EQUIPMENT ACRONYM CLASS CODE NUMBER CODE 0 3 H S T S A A 0 0 Equipment Model Bulletin Filename ANII	WORK CODE EQUIPMENT ACRONYM CLASS CODE NUMBER 0 3 H S T S A A 0 0 6 Equipment Model Bulletin Filename ANNILIA

Part or	Item	Task Statement and Instruction	Est.	Min.		Threshold	s
Component	No	(Comply with all current safety precautions)	Time	Skill	Run	Pieces	Time
· ·			Req	Lev	Hours	Fed	Period
			(min)			(000)	
SAFETY	1.	COMPLY WITH ALL SAFETY PRECAUTIONS.	1	All			
STATEMENT	١.	Disconnect power and apply lockouts when	'	^"			
STATEMENT		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 HEE OF COMPRESSED OR BLOWN AIR					
		THE USE OF COMPRESSED OR BLOWN AIR IS PROHIBITED.					
		When cleaning is required, an alternative					
		cleaning method such as a HEPA filtered					
		vacuum cleaner, a damp cloth, lint-free cloth,					
		or brush, must be used in place of compressed					
		or blown air. Report safety deficiencies to					
		your supervisor immediately upon detection.					
		WARNING FOR EWP/PPE:					
		Steps contained in this bulletin may require					
		the use of Electrical Work Plan (EWP) Personal					
		Protective Equipment (PPE). Refer to the					
		current EWP MMO for appropriate EWP PPE					
		and barricade requirements.					
LOCK OUT	2.	Power Down and Lock Out Power.	10	7			
		WARNING					
		Electrical power will always be present					
		at the input of the disconnect device					
		unless the circuit is disabled at the					
		facility power distribution panel located					
		at					
		Power down the machine and lock out its electrical					
		power as prescribed by the current local lockout					
		instructions providing lockout/restore procedures.					
		WARNING					
		WARNING					
		Discard or dispose of chemical soaked					
		materials according to SDS and in					
		accordance with local procedures.					

U.S. Postal Service								IDE	NTIF	ICAT	ION					
Maintenance Checklist	_	RK DE					MENT NYM				CLA CO	ASS DE	NI	JMBI	₽R	TYPE
	0	3	Н	S	Т	S					Α	Α	0	0	6	М
Equipment Nomenclature High Speed Tray Sorter	Equipment Model HSTS					В			name 4155			AN	NUA	L		

Part or	Item	Task Statement and Instruction	Est.	Min.		Threshold	S
Component	No	(Comply with all current safety precautions)	Time Req (min)	Skill Lev	Run Hours	Pieces Fed (000)	Time Period
Sorter Computer Cabinet	3.	Clean Cabinet. Vacuum the interior of cabinet. Clean exterior of all cabinets with mild detergent and water.	20	7			
RETURN TO SERVICE	4.	Power Up HSTS System. 1. Power up preparation. a. Ensure tools and materials are removed from work area. b. Replace all machine panels. c. Close all machine doors and covers. WARNING Be cautious when working around or on equipment when power has been applied. Take precautions to prevent hair, clothing, tools, and test equipment from being caught in moving parts. 2. Restore power to equipment as prescribed by current local procedure providing lockout/ restore procedures. 3. Restart Systems in accordance with manufacturer's guideline.	3	9			
CLEAN UP	5.	Clean Up. Ensure all tools, lubricants, rags, etc., are removed from the work area. Notify supervisor of any deficiencies.	3	All			

U.S. Postal Service								IDE	NTIF	ICATI	ON					
Maintenance Checklist	_	RK DE			_		MENT	•			CL/ CO		NU	JMBE	R	TYPE
Maintenance oncomist	0	3	Н	S	Т	S	JIN Y IVI				A	A	0	0	6	М
Equipment Nomenclature High Speed Tray Sorter						В			name 4155			ANI	NUA	L		

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

THIS PAGE BLANK

ATTACHMENT 7 HIGH SPEED TRAY SORTER MASTER CHECKLIST OPERATIONAL MAINTENANCE

09-HSTS-AA-001-M

Time Total: 68.5 Minutes

U.S. Postal Service								IDE	NTIF	ICAT	ON					
Maintenance Checklist	WORK EQUIPMENT ACRONYM								CLASS CODE					JMBE	ĒR	TYPE
	0	9	Н	S	Т	S					Α	Α	0	0	1	М
Equipment Nomenclature High Speed Tray Sorter	Equ	Equipment Model HSTS				•	В	ulletin N								

Part or	Item	Task Statement and Instruction	Est.	Min.		Threshold	S
Component	No	(Comply with all current safety precautions)	Time Req	Skill Lev	Run Hours	Pieces Fed	Time Period
			(min)			(000)	
SAFETY STATEMENT		COMPLY WITH ALL SAFETY PRECAUTIONS. Disconnect power and apply lockouts when required by this instruction. Refer to current local lockout procedures to properly shutdown and lockout this machine. Open equipment and inspect dust conditions. Check for suspicious dust or unusual debris. If any unusual	1	All			
		substance is found notify supervisor prior to proceeding with any further action on the equipment.					
		THE USE OF COMPRESSED OR BLOWN AIR IS PROHIBITED. When cleaning is required, an alternative cleaning method such as a HEPA filtered vacuum cleaner or a damp rag must be used in place of compressed or blown air. A lint-free cloth or brush may be used on optical equipment only when other cleaning methods cannot be used. Report safety deficiencies to your supervisor immediately upon detection.					
		WARNING FOR EWP/PPE: Steps contained in this bulletin may require the use of Electrical Work Plan (EWP) Personal Protective Equipment (PPE). Refer to the current EWP MMO for appropriate EWP PPE and barricade requirements.					
SYSTEM	2.	Observe Warning Horn and Beacons.	2	7			
		During normal start-up, watch for proper operation of warning horn and beacons.					
HSTS COMPUTER	3.	System Computer.	2.5	9			
		During normal operation					
		1. Ensure proper operation of the CPU fan.					
		Observe operator screen for any fault messages or abnormal indications.					

U.S. Postal Service								IDE	NTIF	ICAT	ION						
Maintenance Checklist	WORK CODE						MENT NYM	•	CLASS CODE				NUMBER			TYPE	
	0	9	Н	S	Т	S					Α	Α	0	0	1	М	
Equipment Nomenclature Equipment Nomenclature High Speed Tray Sorter		Equipment Model HSTS							Bulletin Filename MM14155					Tourly			

_							
Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time	Min. Skill	Run	Threshold: Pieces	Time
Component	140	(Comply with all current salety precautions)	Req	Lev	Hours	Fed	Period
			(min)			(000)	
CAMERAS	4.	Cameras.	3	10			
		WARNING					
		Do not stare into the camera's window at					
		the laser / LED light. Avoid direct eye exposure. The laser / LED light level does					
		not constitute a health hazard, however					
		staring at the laser / LED light for					
		prolonged periods could result in eye damage.					
		During normal operation:					
		Observe cameras as trays/tubs are presented					
		to the system.					
		Ensure proper camera operation and read					
		rate.					
SYSTEM	5.	Check System Operation and ULX Transmission.	15	10			
		With system operating and sortplan loaded					
		run one tray or scan a tray label.					
		2. Verify that the camera reads the barcode.					
		3. Check ULX Transmission in MPEWatch.					
		a. Log into MPEWatch on an ACE computer.					
		b. Select MPEwatch Site List.					
		c. Select your facility from the list of sites.					
		 Select mhe monitor from the menu options at the top of the screen. 					
		e. Find the HSTS in the chart at the bottom of					
		the page.					
		f. Ensure it has "OK" under ULX Details.					
		 g. Review all other information on this report and notify supervisor of any problems. 					
CONVEYOR	6.	Motorized Drive Rollers.	8	9			
		During normal operation:					
		With equipment running, observe drive rollers for proper operation.					
		 Look and listen for evidence of damage to roller or loose mounting hardware. 					

U.S. Postal Service								IDEI	NTIFI	CATI	ON							
55 1 1 1 1 1 1	WC	RK			Е	QUIF	MENT		CLASS				N	JMBE	TYPE			
Maintenance Checklist	CODE				- 1	ACRO	MYM		CODE									
	0	9	Н	S	Т	S					Α	Α	0	0	1	M		
Equipment Nomenclature High Speed Tray Sorter	Equipmer			nent Model HSTS						Bulletin Filename MM14155					Tourly			

_							
Part or	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time	Min. Skill	Dun	Threshold	
Component	INO	(Comply with all current safety precautions)	Req	Lev	Run Hours	Pieces Fed	Time Period
			(min)			(000)	
CONVEYOR	7.	Driven Rollers.	11	9			
		During normal operation:					
		 With equipment operating, listen for abnormal noise from rollers. 					
		2. Look for damaged or missing O-rings.					
		3. Look for frozen or inoperative rollers.					
HIGH SPEED	8.	High Speed Merges.	4	9			
MERGE		During normal operation:					
		 Observe High Speed Merge sections for proper operation. 					
		Observe tray movement for any abnormal indications such as jumps or stalls.					
SPIRAL	9.	Spirals.	6	9			
CONVEYORS		During normal operation:					
		 Observe Spiral Conveyor sections for proper operation. 					
		Observe tray movement for any abnormal indications such as jumps or stalls.					
PULLEYS	10.	Head, Tail, Take-Up & Snub.	2	9			
		During normal operation:					
		 With equipment operating, listen to pulley bearing for abnormal noise. 					
		Feel bearing housings for excessive vibrations.					
		Examine pulleys for eccentricity or other indications of a bent shaft.					
CONVEYOR	11.	Narrow Belt Sorter & Return Belt.	10	9			
		During normal operation:					
		 With equipment operating, observe belts to determine proper operation. 					
		 Look and listen for evidence of belt slippage on Motorized drive pulley. 					
		Look for excessive belt sag between idler rolls.					
		 Observe tracking of belts over tail, head, and take-up pulleys. 					

U.S. Postal Service								IDE	NTIF	ICAT	ION					
Maintenance Checklist	_	RK DE					MENT MYM				CLASS CODE		NUMBER			TYPE
	0	9	Н	S	Т	S					Α	Α	0	0	1	М
Equipment Nomenclature High Speed Tray Sorter			Equipment Model HSTS					В			name 4155		Tourly			

Part or	Item	Task Statement and Instruction	Est.	Min.		Thresholds	S
Component	No	(Comply with all current safety precautions)	Time Req (min)	Skill Lev	Run Hours	Pieces Fed (000)	Time Period
		5. Look for belt run-out along carrying and return runs of conveyor.6. Look for tracking problems or damaged belts.7. Watch trays/tubs; look for any stalls or jumps					
TRANSFER	12.	8. Check pneumatic take-ups for proper operation. Observe Operation of Transfer Assemblies	3	9			
ASSEMBLY	12.	Observe Operation of Transfer Assemblies. During normal operation:	3	9			
		 Ensure Transfer Assemblies are activating on the center of the tray or tub. 					
		Ensure the tray/tub does not twist or turn when leaving the Transfer Assembly, indicating a problem with the belts.					
		Listen/watch for excessive noise or vibration during Transfer Assembly cycle.					
SYSTEM	13.	Notify Supervisor.	1	ALL			
		Notify supervisor of any deficiencies found.					