1.0 ABSTRACT

This work item describes the requirements to conduct an annual inspection, test and certification of the ships, material handling equipment (MHE) - forklifts.

2.0 REFERENCES/ENCLOSURES

2.1 REFERENCES

2.1.1 NAVSUP Tech Manual 0530-LP-642-6711, NAVSUP Publication 538; Management of Material Handling Equipment (MHE) and Shipboard Mobile Support Equipment (SMSE)

2.1.2 Tech Manual T4550-COT-010, Hyster Fork Lift Truck, Diesel Powered, S60FTG – 6000 LB CAPACITY

2.1.3 Tech Manual L-T4547-COT-010, Hyster Fork Lift Truck, Electric Powered, E40ZG – 4000 LB CAPACITY

2.1.4 Tech Manual T4548-COT-010, Hyster Fork Lift Truck, Electric Powered, E60ZG – 6000 LB CAPACITY - OPERATION, MAINTENANCE, REPAIR AND OVERHAUL ILLUSTRATED PARTS BREAKDOWN HYSTER FORK LIFT TRUCK

2.1.5 Tech Manual TG300-AH-MMC-010, Hyster Fork Lift Truck, Electric Powered, E100Z – 10K LB CAPACITY

2.1.6 NAVSEA Tech Manual SW023-AH-WHM-010, Handling Ammunition and Explosives with Industrial Materials Handling Equipment (MHE)

2.2 ENCLOSURES

2.2.1 NAVSUP Publication 538, Fig. 8-12, MHE Initial Receipt Inspection Form

2.2.2 NAVSUP Publication 538, Fig. 8-13, Fork Maintenance Inspection Form

2.2.3 NAVSUP Publication 538, Fig. 6-1, MHE Safety

Certification Form

3.0 ITEM LOCATION/DESCRIPTION/QUANTITY

3.1 Location

3.1.1 MHE Stowage (01-24-01)

3.2 Description/Quantity

#	MSC Vehicle No.	Manufacturer	Type	Model	Serial No.	SWL	Safety Cert Exp
1	23-02441	Hyster	EE	E40ZG	G108N10667F	4000	Oct 2023*
2	23-02442	Hyster	EE	E40ZG	G108N10669F	4000	Feb 2025
3	23-02443	Hyster	EE	E40ZG	G108N10672F	4000	Feb 2025
4	23-02444	Hyster	EE	E40ZG	G108N10676F	4000	Oct 2023*
5	23-02445	Hyster	EE	E60ZG	G108N10673F	6000	Feb 2025
6	23-02446	Hyster	EE	E60ZG	G108N10678F	6000	Feb 2025
7	23-02447	Hyster	EE	E60ZG	G108N10677F	6000	Feb 2025
8	23-02448	Hyster	EE	E60ZG	G108N10668F	6000	Oct 2023*
9	23-02449	Hyster	EE	E60ZG	G108N10666F	6000	Feb 2025
10	23-02450	Hyster	EE	E60ZG	G108N10674F	6000	Oct 2023*
11	23-02451	Hyster	EE	E100Z	E098N02141F	9500	Feb 2025
12	23-02452	Hyster	EE	E100Z	E098N02159F	9500	Feb 2025
13	23-02453	Hyster	EE	E100Z	E098N02181F	9500	Feb 2025
14	23-02454	Hyster	EE	E100Z	E098N02177F	9500	Feb 2025
15	23-02455	Hyster	DS	S60FTG	F187G14141F	6000	Feb 2025
16	23-02456	Hyster	DS	S60FTG	F187G14223F	6000	Feb 2025
17	23-02457	Hyster	DS	S60FTG	F187G14157F	6000	Feb 2025
18	23-02458	Hyster	DS	S60FTG	F187G14170F	6000	Feb 2025
19	23-02459	Hyster	DS	S60FTG	F187G14158F	6000	Feb 2025
20	23-02460	Hyster	DS	S60FTG	F187G14224F	6000	Feb 2025
21	23-02461	Hyster	DS	S60FTG	F187G14260F	6000	Feb 2025
22	23-02462	Hyster	DS	S60FTG	F187G14261F	6000	Feb 2025
23	29-00086	Hubtex	EE / SL	VQ45/4-USN-SB	60.395	9500	Feb 2025
24	29-00097	Hubtex	EE / SL	VQ45/4-USN-SB	62.065	9500	Feb 2025
25	29-03029	ENTWISTLE	Trailer	EJ-42338	61843-016	10000	Feb 2025
26	29-03030	ENTWISTLE	Trailer	EJ-42338	61843-019	10000	Feb 2025
27	29-03031	ENTWISTLE	Trailer	EJ-42338	61889/024	10000	Feb 2025

28	29-03032	ENTWISTLE	Trailer	EJ-42338	61889/026	10000	Feb 2025
29	25-00008	GENIE	AWP/500/N/A Z-45	Z-45/25J IC	Z452309A -38776	GENIE	Oct 2023
30	28-00041	WESLEY	Pallet Jack	42-27-60XTSB	1Y07018	6000	Oct 2023
31	28-00042	WESLEY	Pallet Jack	42-27-60XTSB	1Y07019	6000	Oct 2023
32	28-00043	WESLEY	Pallet Jack	42-27-60XTSB	1Y07020	6000	Oct 2023
33	28-00044	WESLEY	Pallet Jack	42-27-60XTSB	1Y07021	6000	Oct 2023
34	28-00045	WESLEY	Pallet Jack	42-27-60XTSB	08Y08139	6000	Oct 2023
35	28-00046	WESLEY	Pallet Jack	42-27-60XTSB	08Y08140	6000	Oct 2023
36	28-00047	WESLEY	Pallet Jack	42-27-60XTSB	08Y08141	6000	Oct 2023
37	28-00048	WESLEY	Pallet Jack	42-27-60XTSB	08Y08142	6000	Oct 2023

TRUCK	QTY	LBS	TYPE
4K	**4**	**9832**	**ELECTRIC**
6K	**6**	**11450**	**ELECTRIC**
6K	**8**	**11360**	**DIESEL**
9.5K	**4**	**16450**	**ELECTRIC**
9.5K (SL)	**2**	**14520**	**ELECTRIC**
Trailer	**4**	**4000**	**N/A**
Pallet Jack	**8**	**6000**	**N/A**

***Denotes Bad Battery OOC**

4.0 GOVERNMENT FURNISHED EQUIPMENT/MATERIAL/SERVICE: None

5.0 NOTES

5.1 The contractor and all subcontractors, regardless of tier must consult the General Technical Requirements (GTR) to determine applicability to this work item. In performance of this work item, the contractor and all subcontractors regardless of tier must comply with the requirements of all applicable GTRs including but not limited to GTRs 1 through 7, 22, 23, 24, 28, and 29.

5.2 Powered industrial truck designations per 29 CFR §1910.178(b).

5.3 Per MSC QMS Procedure N4.48.4460.1-Q entitled Management of Material Handling Equipment all Afloat MHE will be certified for ordnance handling.

5.4 Charging, testing and maintenance shall not be performed in magazines or other areas/spaces where ammunition

and explosives are present.

5.5 This ship contains high voltage (hv) electrical systems. Obey all posted and verbal instructions regarding safety and exclusion from high voltage areas. At no time approach, work on, or enter a high voltage area without proper authorization.

5.6 The T-AKE class electrical color coding does not follow the consistent color scheme. The ship is known to have current carrying conductors colored green, blue, black, and white. Assume all electrical cables are energized until tested and proven otherwise. Test all electrical cables to ensure they are de-energized prior to working on the item.

5.7 Work can be performed on board the vessel or the contractor/Hyster can opt to remove MHE at their own expense.

6.0 QUALITY ASSURANCE REQIREMENTS: None additional

7.0 STATEMENT OF WORK REQUIRED

7.1 Provide the services of authorized Hyster field service representatives with all required tools and testing equipment to attend the vessel and perform certification inspection and testing of forklift identified in paragraph 3.0, using References in 2.0. Accomplish all work in accordance with the Manufacturer’s requirements.

7.2 Remove and replace all interferences, rig and unrig, stage and unstage, make all disassemblies and subsequent reassemblies. Provide and operate equipment, and supply all services and assistance to accomplish the thorough examination and testing of the ships Material Handling Equipment (MHE) using References 2.1.1 through 2.1.6 as guidance.

7.3 With assistance from the Chief Engineer coordinate the movements, inspection and testing of MHE to avoid damage or injury during the course of this work item. The ship’s crew will operate all MHE while aboard ship.

7.4 Coordinate the inspection and testing of equipment with the OMT REP and Chief Engineer to ensure the vessel is aware of equipment status at all times until the work is completed.

7.5 Only competent, licensed and trained Operators in compliance with 29 CFR § 1910.178(l)(6) shall operate the MHE while ashore. Use good operating practices to prevent accidents. It should be anticipated that some features of the MHE may not operate correctly upon initial receipt. Careful attention should be practiced by the Operators to maintain control of the vehicle at all times.

7.6 Conduct an inventory of the ships MHE listed in Paragraph 3.2. Identify and record the following data for each onto a MHE Initial Receipt Inspection Form, Enclosure 2.2.1.

7.6.1 Vessel Name:

7.6.2 MSC Vehicle No:

7.6.3 Mfg:

7.6.4 Serial No:

7.6.5 Safe Working Load (lbs):

7.6.6 Designation:

7.6.7 Weight Test Expiration (date):

7.6.8 Hourmeter reading:

NOTE: Check fuel system for leaks prior to any service or maintenance activity.

7.7 Conduct inspection and testing of the MHE, using References 2.1.1 through 2.1.6, to verify proper operation and adjustment. The inspection shall determine whether conditions found constitute a hazard and whether repairs or disassembly is required for additional inspection. Record the results for each onto a MHE Initial Receipt Inspection Form, Enclosures 2.2.1, and results of the initial inspection shall be provided to the MSC REP. The examination shall include the following items:

7.7.1 Confirm the MHE is free of unauthorized modifications or additions.

7.7.2 Tires and Rims. Inspect tires for excessive wear and damage. Remove foreign material from tire treads. Reject tires for illegible or missing markings or labels. Reject

pneumatic tires when the tire tread has worn down to the tread wear mark or if fabric is exposed through the sidewall. Inspect the rims for dents, bends, and cracks.

7.7.3 Engine Oil and Fluid Levels. Always inspect floor/deck under MHE for any fluid puddles. Check:

a. Engine oil,

b. Hydraulic oil,

c. Transmission oil,

d. Brake fluid,

e. Radiator coolant. CAUTION: Do not check radiator coolant level when engine is hot.

f. Record if any levels are low.

7.7.4 Belts. Inspect engine belts for cracks, wear, damage, nicks or cuts, and proper tension. The contractor shall include in their bid price to replace Two (2) sets of belts for each type of Diesel forklift.

7.7.5 Battery. Inspect battery cables for damage, cuts and abrasions. Verify cables are securely fastened to connector lugs and are free of corrosion, verdigris, arcing, pitting, exposed conductor material, and loose connections.

7.7.6 Electric trucks have color coded battery indicator power band indicating remaining charge level. Charge the battery when the indicator drops into yellow zone.

WARNING: For internal combustion start batteries, do not jump start any battery with low fluid level.

7.7.7 Access Covers. Inspect all access covers (e.g., battery or engine) for loose, missing, broken, or corroded covers. Ensure latches snugly secure covers when fastened.

7.7.8 Fuel System (Fuel-Powered MHE only). Visually inspect the entire fuel system assembly for any leaks while the MHE is operating. The MHE shall be rejected if any fuel leaks are discovered. Where accessible, inspect the fuel tank or gas cylinder for leakage, denting, bulging, corrosion, pitting,

gouges not exposed to fire, or evidence of rough usage. Valves are protected from physical damage.

7.7.9 Neutral Start Switch (Fuel-Powered MHE only). Test the neutral start switch by attempting to start the engine with the directional control lever in either the forward or reverse position. If the engine starts, the MHE shall be rejected.

7.7.10 Control Levers and Pedals. Check that the control levers for the transmission, mast, and attachment operate as described in Operating Manual. Check that the pedals operate correctly as described in Operating Manual.

7.7.11 Indicator Lights, Fuses, and Relays. Turn key to ON position. All warning lights and indicator lights will light up for two seconds (start check) when system power is turned ON. Check all the indicator lights for correct operation. If any indicator lights do not operate correctly, check the fuses.

7.7.12 The OEM representative shall provide the following material:

a. Six (6) Light Bulbs for each type of forklift. The systems shall be for running lights, indicator lights, and warning lights.

b. twenty (20) fuses of multiple amperages.

7.7.13 Engine. Start engine and check:

a. Unusual Engine Noises. Should any unusual noises be noted with the engine running, turn off MHE, reject and discontinue this check.

b. Idle Speed

c. Governed Speed

7.7.14 Lights. Check that the headlights, brake lights, and any other installed lights are working. All lights must operate properly for night work.

7.7.15 Horn. Depress the horn push button to verify that the horn is operating properly.

7.7.16 Verify back-up alarm operates.

7.7.17 Lift Chains Wear Check. Using a Mfgs chain scale, measure the lift chains for excess wear.

7.7.18 Hoist and Lowering Control. Raise and lower the lifting assembly to verify the lifting assembly controls operate smoothly. Inspect all hoses for cracked coverings, wear, bulges or leaks. Verifying all fittings are free of cracks or leaks. Inspect for loose or binding (i.e., dry/not lubricated, frozen or rusted) chains.

7.7.19 Inspect hose and cable reel guards, as applicable, for breaks, bends or chafing.

7.7.20 Tilt and Side Shift. Tilt forward and backward to verify the tilt operates smoothly. Operate side shift to verify the carriage moves immediately and smoothly to the left and the right. Verify all hoses are serviceable and that these fittings are free of cracks or leaks. For any additional accessory controls installed on the MHE; verify proper operation with the manufacturer’s recommendations.

7.7.21 Transmission/Clutch. Verify that the transmission/clutch operates smoothly with no unusual noises.

7.7.22 Directional Controls. Shift directional controls into forward, neutral and reverse directions to verify the MHE operates properly and smoothly. Ensure steering operation functions smoothly.

7.7.23 Brake System Check.

a. Check the operation of the Parking Brake. Stop lift truck in an uphill direction with Rated Load on 15% grade, and apply park brake. Confirm forklift remains static on grade. Reposition lift truck with No Load in a downhill direction, on 15% grade, and apply park brake. Confirm forklift remains static on grade. The parking brake, when in good condition and correctly adjusted, will hold.

NOTE: A 15% grade is a slope that increases 1.5 ft increase in 10 ft (1.5 meters in 10 meters).

b. Visually inspect that no fluid is leaking from

the brake system.

c. Check the Service Brakes. Check the brake lining and parts of the brake assembly for wear or damage. Verify they stop the MHE smoothly and evenly without pulling or binding.

d. Where applicable, check the dead-man brake or travel control disconnect device for proper operation.

7.7.24 Gauges/Meters. Where applicable, inspect the following:

a. Warning Indicators. Verify that all warning devices, such as horns, bells, lights, etc., fitted on MHE are operational. With the engine running at normal operating temperature, check the oil pressure gauge for normal operating pressure. If any warning indicator is inoperable or signals a malfunction, the MHE shall be rejected until repaired.

b. Coolant Temperature Gauge. With the engine running at normal operating temperature, check that the gauge is indicating within the proper indicating range.

c. Fuel Gauge. Check the fuel gauge for proper reading. Electric powered types should be in "green" power range.

d. Voltmeter/Ammeter. With the engine running, check the voltmeter/ammeter to verify that it’s in the green range when the engine is running at governed speed.

e. Hourmeter. Verify that the hourmeter is registering while the engine is running.

f. Weight Scales. With forks elevated, and no load, verify that the weight scales read zero. Adjust accordingly.

7.7.25 Fire Extinguisher. When equipped, visually inspect the extinguisher cylinder for dents. Check that the gauge is registering in the green (if so equipped) and check that the wire seal has not been broken. Verify periodic checks are current. Check the nozzle and hose for defects. Reject extinguisher if not serviceable.

7.7.26 Operator Restraint System. If MHE is equipped with an operator restraint system (e.g., seat belt, hip restraint) it shall be inspected to verify that they fully extend out, can be properly secured, and fully retract back. Confirm preparation of the Emergency Locking Retractor (ELR). Additionally, they shall not exhibit any evidence of the following discrepancies:

a. nicks or cuts,

b. frayed webbing,

c. holes, and

d. broken or worn retractor.

7.7.27 Overhead Guards and Load Backrest. Inspect all the welds and hardware. Verify that overhead guard, load backrest and hardware is in place and all structural members are secured. If any have been removed, examine them to confirm each is stenciled or permanently marked with the MSC serial number of the forklift it came from. (SMS Procedure 7.6-001-ALL).

7.7.28 Ground Straps or Static Conductive Tires/Wheels. For EE type MHE, verify the presence of two ground straps and that they touch the floor/deck or two conductive tires/wheels. For EX type MHE, verify the presence of two conductive tires/wheels.

7.7.29 Visually inspect for spark emission in a dark location. The MHE shall be rejected if there is any spark emission.

a. For fuel-powered MHE, inspect with the engine on and in neutral. Special attention should be given to the entire exhaust systems (pipes), the ignition wiring, the alternator/generator housing, and the area under the MHE where the engine is located.

b. For electric-powered MHE, inspect while operating each electrical motor (e.g., drive motor, hydraulic, etc.). The drive wheels may be raised off the deck/floor to test the drive motor. Special attention should be given to the area around the covers and under the MHE where the wiring, contactors, and motors are located.

7.7.30 Structural Cracks/Broken Weldments. Inspect all external weldments for structural cracks or defects. Reject MHE until repaired or replaced.

7.7.31 Mandatory Markings. Verify all functions, instruction, caution and warning labels, markings or placards are clearly and properly marked including:

a. safe working load (SWL) and vehicle weight (VW) on both sides, and except for pallet trucks, in view of operator,

b. operator controls,

c. manufacturer’s nameplate/label,

d. accredited laboratory (UL, FM) certification,

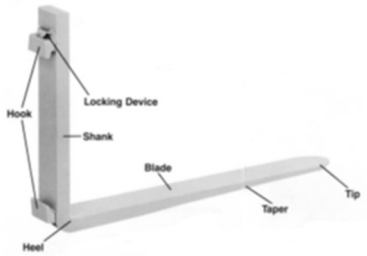
e. for tow tractors, the drawbar pull rating (DBP) on both sides and rear, and coupler height on rear, and

f. MHE Safety Certification marking.

g. Reject if the above markings are missing, illegible, expired or incorrect. All required markings that are rejected shall be recorded on the MHE Inspection Form, but is not a cause for removal from service.

7.7.32 Immediately report any adverse conditions noted to the OMT REP. The report is to include photographs of each MHE for record purposes.

7.8 Conduct the annual fork maintenance inspection in accordance with Reference 2.1.1. Record the results for each onto a Fork Maintenance Inspection Form, Enclosure 2.2.2, and submit to the OMT REP. Inspection criteria is outlined in Reference 2.1.1:



7.8.1 Surface Cracks. Surface cracks appearing on the forks shall be cause for rejection until forks are repaired or replaced.

7.8.2 Straightness of Blade and Shank.

7.8.3 Fork Angle (upper face of blade to load face of the shank)

7.8.4 Difference in Height of Fork Tips. If the difference in tip heights exceed 3% of the length of the blade, the set of forks shall not be returned to service until repaired per reference 2.1.6.

7.8.5 Wear; Fork blade and shank, fork hooks and fork markings. If the thickness is reduced to 90% of original thickness the forks shall not be returned to service.

7.8.6 Fork Positioning Locks/Stops. Verify the fork positioning locks/stop secure each fork in position. Verify forks are securely engaged to the carriage.

7.8.7 Fork Safety Chains. Verify the presence and operation of fork safety chains (equipped on units with folding forks) and associated locking pins.

7.8.8 Legibility of Markings

7.8.9 Any fork defect shall be a cause for the MHE to be removed from service until the fork is repaired or replaced. NOTE: Never attempt to repair damaged forks. Only the fork manufacturer or their designated representative shall be authorized to repair forks. Do not heat, weld, cut, drill, or bend the forks. Replace damaged forks as a set.

7.9 Conduct maintenance on the MHE in accordance with the manufacturer’s design, installation, maintenance instructions and service bulletins. Refer to References 2.1.2 through 2.1.6. The maintenance shall include/verify:

7.9.1 Replace Hydraulic Oil

7.9.2 Replace the Hydraulic Oil Filter

7.9.3 Replace the Hydraulic Tank Breather

7.9.4 Replace the Coolant(**)

7.9.5 Replace the Engine Oil(**)

7.9.6 Replace the Engine Oil Filter(**)

7.9.7 Replace the Air Filter(**)

7.9.8 Replace the Fuel Water Separator, Diesel(**)

7.9.9 Replace the In-Line Fuel Filter(**)

7.9.10 Replace the Transmission Oil(**)

7.9.11 Replace the Transmission Oil Filter(**)

7.9.12 Replace the Brake Fluid

7.9.13 Replace the Differential and Drive Axle Oil

7.9.14 Replace Contactor tip sets for the hydraulic pump

7.9.15 Replace the Integral Sideshift Carriage bearings regardless of wear

7.9.16 Clean and lubricate the Lift Chains

7.9.17 Adjust the brakes in accordance with the manufacturer's recommendations

7.9.18 Inspect fuse blocks, fuses and connectors for damage and corrosion

7.9.19 Verify and adjust all switches for proper operation (brake lights, seats, seat brake, parking brake, direction, start, etc.)

7.9.20 Remove, clean and adjust the Fuel Injectors(**)

7.9.21 Visually examine all hydraulic hoses/fittings for damage, wear, age, cracking, leaks, and kinks

7.9.22 Clean battery and cable terminations

7.9.23 Clean and lubricate all moving parts where

lubrication is specified in References 2.1.2 through 2.1.6, including:

a. Mast, sliding and roller surfaces

b. Mast Pivots

c. Mast Integral Sideshift Carriage (upper and lower bearings)

d. Tilt Cylinder Ends

e. Brake Master Cylinder Rod End Pin

f. Manual Hydraulic Hand Levers

g. Wheel Bearings

h. Steering Axle Tie Rod Ends

i. Steering Axle King Pin Bearing

j. Pedals, Levers, Seat Rails, Cables, Hinges, Linkages and Hood Latch

NOTE: (**) - Fuel powered MHE

7.10 Establish conditions for testing of the MHE.

7.10.1 Install barricades and warning signs to prevent access to areas of active testing. Erect and maintain control lines, warning lines, railings or similar barriers to mark the boundaries of the hazard areas. Brake test course shall be level, clean asphalt, brushed concrete, level non-skid, or equivalent surfaces, and of adequate length to permit safe conduct of the test.

7.10.2 Weight Test Loads. Only known values of test weights shall be used for testing. Dynamometers, or other recording equipment, are not permitted in lieu of dead weights. The assembled test load, including rigging, shall be accurate within +5/-0 percent of the nominal test load. The weights shall be measured using calibrated equipment with a minimum accuracy of ± 2 percent (of scale) traceable to the National Institute of Standards and Technology.

7.10.3 Marking of Test Loads. The test weight(s) shall be marked (e.g., steel stamping, etching, engraving, raised metal deposit, or stenciling) with a unique identification number and the weight in pounds.

7.11 Conduct a functional test, under no load conditions, evaluating the performance of each individual MHE. Record the results for each onto a MHE Safety Certification Form, Enclosure 2.2.3.

7.12 Conduct a Static Discharge Test in accordance with References 2.1.1 through 2.1.6. (TYPE EE, EX, and HS/ORDNANCE MHE only). Place a conductive plate on the deck/floor so that the static conductor (either tires or ground straps) rests upon it. Using a calibrated Megohmmeter in accordance with manufacturer's recommendations, place one electrode on the plate and the other on an unpainted section of the chassis. Apply 500 volts and take the resistance reading. The MHE shall be rejected if the resistance is greater than 250,000 ohms. Record discharge reading. Record the results for each onto a MHE Safety Certification Form, Enclosure 2.2.3.

7.13 Conduct an operational weight test in accordance with References 2.1.1 through 2.1.6.

7.13.1 Position the lift truck at rest on a smooth, level surface with the mast vertical. Secure the truck as necessary to prevent overturn. Perform testing with the hydraulic system at normal operating temperatures.

7.13.2 Position a rated load (100% of the MHE's SWL) on the forks such that the center of mass of the test load is on the truck’s centerline and at the rated load center. Ensure the load is centered laterally. Raise the forks 6 inches off the deck/floor, tilt full back, and hold for 2 minutes.

7.13.3 Shift lateral to full limits and then raise load to full mast extension. Repeat lateral shift operation and then return load to deck/floor.

7.13.4 With the mast vertical, forks centered and rated load on the forks, raise the forks to the maximum height. After 2 minutes, measure the downward and tilt drift, as applicable, from the reference points.

7.13.5 Remove the load and restraints and visually inspect the forks, mast, and other structural components for cracks, elongation, permanent deformation, fractures, or failures. Record the results for each onto a MHE Safety Certification Form, Enclosure 2.2.3.

7.13.6 The forklift truck shall be rejected if the mast drifts vertically more than 1-3/4 inches. If equipped with a tilting mast, the forklift truck shall be rejected if it tilts more than one degree. If equipped with a tilting carriage, the forklift truck shall be rejected if any movement is noted when tilting the carriage rearward the second time. The forklift truck shall be rejected if it lifts, shifts or tilts the load too slowly or unevenly, the hoses and tubing have bulges or distortions, the frame and mast assembly have fractures or broken welds, or if the forklift truck leaks hydraulic fluid. When raising or lowering the mast, if the forklift truck does not operate freely and/or binds or catches on the overhead guard or any other component, it shall be rejected.

7.14 Conduct a brake operation test in accordance with References 2.1.1 through 2.1.6.

7.14.1 Load forks with a rated load (100% of the MHE's SWL). Test load shall bear against load backrest, shank of forks, or carriage and need not be at the rated load center. Ensure the test load is centered laterally. For MHE with tilt capability, the forks may be tilted to stabilize the load.

7.14.2 Determine the maximum speed of the MHE. This may be accomplished by determining the time it takes the MHE to pass through a 25-foot course as follows: Measure a 25-foot straight course. Transverse the course in REVERSE at maximum speed from a running start. Bring the machine to top drive speed before reaching the start line. Using an appropriate means to measure time (e.g., stop watch), note the time it takes for a reference point on the MHE to move from the start of the course to the end. Alternately, the maximum speed may be measured using a device such as a radar/laser gun.

7.14.3 With the MHE at maximum speed and after passing through the 25-foot course, apply the service brakes to achieve maximum deceleration without sliding the tires. Record the stopping distance measured from the point of brake application.

7.14.4 Using table 6-2 of Reference 2.1.6, find the maximum allowable stopping distance associated with the speed or the 25-foot course time.

7.14.5 MHE shall be rejected if:

a. The recorded distance exceeds the maximum allowable stopping distance listed in table 6-2.

b. The brake pedal travels over half the distance to the floor.

c. The brake pedal travels gradually to the floor (spongy brakes) after brakes are applied.

d. The brakes do not gradually engage (grabbing) causing sudden or immediate stops.

e. Brake fluid is leaking, exceeding manufacturer’s specifications or standard industrial maintenance practices.

f. Any component fails.

7.15 Conduct a parking brake test in accordance with References 2.1.1 through 2.1.6.

7.15.1 Test the parking brake by engaging the parking brake on the unloaded MHE. Attempt to drive the MHE forward by applying a moderate amount of power to the MHE. If the MHE moves, adjust the parking brake, and repeat the parking brake test. The MHE shall be rejected if proper adjustments cannot be achieved.

7.16 Conduct a safety braking/disconnect system test in accordance with References 2.1.1 through 2.1.6.

7.16.1 Test the safety braking/disconnect system by moving the unloaded MHE forward at a moderate speed (less than 5 mph) and engage the travel control disconnect. The MHE shall be rejected if the system fails to engage and bring the MHE to a stop.

7.17 Conduct an overload weight test using References 2.1.1 through 2.1.6 as guidance. SHALL ONLY BE CONDUCTED WHEN MHE HAS UNDERGOINE REPAIRS or MODIFICATIONS AFFECTING LOAD-BEARING

COMPONENTS. Position the lift truck at rest on a smooth, level surface with the mast vertical and the forks six inches (150 mm) above the floor. Secure the truck as necessary to prevent overturn. With a crane or another lift truck, place the 150% test load on the forks such that the center of mass of the test load is on the truck's centerline and at the rated load center. Let the 150% test load remain on the forks for two minutes. Remove the load and restraints and visually inspect the forks, mast, and other structural components for cracks, elongation, permanent deformation, fractures, or failures. Record the results for each onto a MHE Safety Certification Form, Enclosure 2.2.3. For estimating purposes assume 5 forklifts will require an Overload Weight Test.

7.18 Conduct a lifting eye test in accordance with References 2.1.1 through 2.1.6. SHALL ONLY BE CONDUCTED WHEN LIFTING EYES HAVE BEEN REPAIRED OR REPLACED. Apply a vertical lifting force of 150% of the weight of the MHE to the attachments using an appropriate lifting device (e.g., sling). Hold the force for 2 minutes. Examine the lifting lugs and points where attached to the MHE. Record the results for each onto a MHE Safety Certification Form, Enclosure 2.2.3. For estimating purposes assume 5 forklifts will require a Lifting Eye Test.

7.19 Testing is to be coordinated with the OMT REP to allow for observation if deemed necessary. Demonstrate current calibration of all test equipment prior to any testing.

7.20 Clean, prime and paint all new and disturbed surfaces to match the surrounding areas.

7.21 MHE Safety Certification Marking. Equipment passing periodic testing must have the previous weight test tags/markings removed and the following information either stenciled or labeled, per Reference 2.1.6, the testing activity's name and the expiration date (month/year). Expiration indicates the date the MHE should be scheduled for its next 18 month periodic test,

SAFETY CERTIFICATION / WEIGHT TEST ACCOMPLISHED BY:

IAW NAVSEA SW023-AH-WHM-010

EXPIRES: _____

7.22 Reports

7.22.1 When inspection, service and testing reveal any deficiency a condition report is to be submitted to the OMT REP with recommended repairs and parts required. Submit one electronic copy in Portable Document Format (PDF).

7.22.2 Prepare and submit Inspection, Test and Certification forms/reports (Enclosures 2.2.1 through 2.2.3) for each MHE detailing the results of their examination, test and certification. All reports are to be signed by the attending Technical Representative who performed the exam and testing. Submit reports to the OMT REP in Adobe PDF format.

7.23 Manufacturer’s Representative

7.23.1 Provide the services of a Manufacturer’s Authorized Service Provider to inspect, test and certify the MHE listed in paragraph 3.2. Qualifications and certificates for the company and field service rep are to be submitted to the OMT REP for review and approval prior to the start of any work. Possible HYSTER sources can be found in Enclosure 2.2.4.

7.24 Preparation of Drawings: None

8.0 GENERAL REQUIREMENTS: None additional

ENCLOSURE 2.2.1 - NAVSUP Publication 538, Fig. 8-12, MHE Initial Receipt Inspection Form

SHIPBOARD UNIT ☐	SHOREBASED UNIT ☐	INSPECTION DATE
MAKE	MHE TYPE	BLADE LENGTH
MODEL	MOTOR TYPE	FUEL TYPE
YEAR	TIRE TYPE	HOUR METER READING
SERIAL NO.	CAPACITY	EQUIPMENT COST CODE

ITEM No.	INSPECTION POINT	ACCEPT	REJECT	N/A
1	Manufacturer's data/identification plate			
2	Manufacturer's "STRUCTURALLY WEIGHT TESTED" marking (ammunition or shipboard handling)			
3	Accredited laboratory certification plate (e.g., UL, FM)			
4	Alphabetical designation (EE, DS, etc.)			
5	Operational controls correctly labeled/marked			
6	Battery identification plate or marking			
7	Fuel type marking (e.g., DIESEL FUEL ONLY)			
8	Warning decals and labels			
9	Safe working load marking (sides and mast) (e.g., SWL 6000 LBS)			
10	Vehicle weight marking (sides and mast) (e.g., VW 10,000 LBS)			
11	Registration number (e.g., 13-20000)			
12	SLEP data plate			
13	"LEAD AND CHROMATE FREE PAINT" marking			
14	"LIFT HERE" marking			
15	"TIEDOWN" marking			
16	Tire pressure marking (pneumatic only)			
17	Fuel cap (color coded)			
18	"SHIPBOARD USE APPROVED" marking			
19	Blue diagonal striping (type EX only)			
20	Instruction plates			
21	Grease fittings (on components) fully filled and accessible			

ENCLOSURE 2.2.1 - NAVSUP Publication 538, Fig. 8-12, MHE Initial

Receipt Inspection Form

ITEM No.	INSPECTION POINT	ACCEPT	REJECT	N/A
22	Correct fluid levels (brake, radiator, transmission, hydraulic, etc.)			
23	Paint is smooth and adheres well			
24	No evidence of loose, missing or broken hardware			
25	No evidence of bent, cracked or worn accessories			
26	No evidence of missing covers, panels, loose or poor fit			
27	Overhead guard and load backrest (cargo guard) not damaged			
28	Forks are straight within 1% of length			
29	Hydraulic cylinders: no weld cracks, leaks or other damage			
30	Neoprene hydraulic lines: free of paint, routed correctly and secured			
31	Towing devices, hitch pins, tow chains, etc. are attached			
32	Battery cables: secure, no cuts/abrasions, and protected by non-conductive covers			
33	Battery mounts and hold downs are secure			
34	Wiring harness is correct with no frayed, brittle or crimped connections (soldered only)			
35	Tires are correct type, size and thread (no delamination shall be accepted)			
36	Wheel lugs are torqued as specified			
37	Check mast rollers and locks			
38	Fork heel pins and locks function			
39	Lift chains and anchor pins are secure and functional			
40	Operator pedals are equipped with rubber pads or non-slip coating			
41	Operator restraint system/seat belt equipped and functional			
42	Dash gauges are correct and marked			
43	Key ignition switch (verify key numbers match contract numbers)			
44	Start MHE and note any unusual noises			
45	Weight gauge is legible and operable			

ENCLOSURE 2.2.1 - NAVSUP Publication 538, Fig. 8-12, MHE Initial Receipt Inspection Form

ITEM No.	INSPECTION POINT	ACCEPT	REJECT	N/A
46	Steering wheel is smooth and little free play			
47	Verify all gauges function			
48	Verify hourmeter operates properly			
49	Verify horn operates			
50	Verify back-up alarm operates			
51	Verify all lights operate: brake, spot, battle/blackout, etc.			
52	No evidence of steering play or loose suspension			
53	Bring to full operating temperature (fuel power only) and check for leaks			
54	Check for arcing and operation of contactors, traction, steer and hydraulic pump motors (electric MHE only)			
55	Battery disconnect switch is operable			
56	Check accelerator and inching/declutching pedal operation			
57	Check brake operation			
58	Parking brake functions			
59	Check emergency stop operation			
60	Check for smoothness when raising mast to full height			
61	Verify hose reel functions smoothly			
62	Check tilt and side shift (rotation some models) operation and smoothness			
63	Check acceleration (all forward and reverse gears)			
64	Check braking (at speed) if smooth and straight			
65	Check transmission (forward and reverse)			
66	Clutch adjustment, engagement and operation			
67	Check for exhaust leaks			
68	Check applicable steering modes (2 wheel, 4 wheel, crab)			
69	Verify the turning radius/tracking			
70	For electric trucks, the presence of static conductive straps or tires			

ENCLOSURE 2.2.1 - NAVSUP Publication 538, Fig. 8-12, MHE Initial Receipt Inspection Form

INSPECTION ACTIVITY	INSPECTOR NAME	DATE (MMDDYY)

	PRINT:	
	SIGNATURE:	

ENCLOSURE 2.2.2 - NAVSUP Publication 538, Fig. 8-13, Fork Maintenance Inspection Form

USN: _____ - _____
Manufacturer': _____ Model: _____ Year: _____ Serial Number: _____
Contract Number: _____

REQUIREMENT

Each fork shall be inspected and documented in the MHE history file at intervals of not more than 12 months or whenever any defect or permanent deformation is detected. Any defect shall be a cause for rejection. MHE shall be removed from service until the fork is repaired or replaced.

DESCRIPTION	LEFT FORK		RIGHT FORK		Not Applicable
	SAT	UNSAT	SAT	UNSAT	
1. Manufacturer's SWL Markings					
2. Surface Cracks					
3. Straightness of Blade and Shank: (a) Upper Face of Blade (b) Front Face of Shank					
4. Fork Angle: (original specification = _____)					
5. Difference in Height of Fork Tips: (Length of blade = __ inches x 0.03 = ___ inches)					
6. Fork Blades: Left Fork: original thickness = __ inches x 0.10 = __ inches current thickness = __ inches Right Fork: original thickness = __ inches x 0.10 = ___ inches current thickness = ___ inches					
7. Positioning Locks/Latches and Stops (where applicable)					
8. Fork Hooks (where applicable)					
9. Plated Fork (Type EX Only)					

Inspection results: Based on the above inspections, the overall condition of each fork is:
Left Fork: SAT/UNSAT Right Fork: SAT/UNSAT

Inspector: _____ Date: _____ Next Due Date: _____

Print Name/Rate:_____ Inspection Activity:_____

ENCLOSURE 2.2.3 - NAVSUP Publication 538, Fig. 6-1, MHE Safety Certification Form

USN/MSC REGISTRATION NO.	MHE CLASS/LIFT CODE/TYPE	SWL	HOUR READER METER	DATE

TEST	PARAGRAPH	PROCEDURE	RESULTS					
MARKINGS	6-6.1	VISUAL INSPECTION:	ACCEPT		REJECT			
FUEL SYSTEM	6-6.2	LEAK INSPECTION:	ACCEPT		REJECT		N/A	
NEUTRAL START SWITCH (Fueled MHE)	6-6.3	OPERATIONAL INSPECTION:	ACCEPT		REJECT		N/A	
WARNING DEVICES (Powered MHE)	6-6.4	OPERATIONAL INSPECTION:	ACCEPT		REJECT		N/A	
SPARK EMISSION (Powered MHE)	6-6.5	VISUAL INSPECTION:	ACCEPT		REJECT		N/A	
STATIC DISCHARGE (Electric and HS/Ordnance Pallet Truck)	6-6.6	CONDUCTOR TYPE:	TIRES		STRAPS		N/A	
		RESISTANCE READING (OHMS):	LEFT		RIGHT		N/A	
			ACCEPT		REJECT		N/A	
CARRIAGE REACH & ROLLER (Reach and Tier)	6-6.7	OPERATIONAL INSPECTION:	ACCEPT		REJECT		N/A	
DRIVE CONTROL (Powered Pallet Trucks)	6-6.8	OPERATIONAL INSPECTION:	ACCEPT		REJECT		N/A	
BRAKE (Except Straddle Carriers and Manual Pallet Trucks)	6-6.9.1	TRAVEL DISTANCE (TABLE 6-2): FEET	ACCEPT		REJECT		N/A	
		PEDAL FEEL:	ACCEPT		REJECT		N/A	
	6-6.9.2	PARKING BRAKE:	ACCEPT		REJECT		N/A	
	6-6.9.3	SAFETY BRAKING/DISCONNECT SYSTEM:	ACCEPT		REJECT		N/A	
BRAKE (Straddle Carrier)	6-6.10	OPERATIONAL INSPECTION:	ACCEPT		REJECT		N/A	
OPERATIONAL WEIGHT TEST (Forklift Trucks)	6-6.11	100% RATED LOAD HELD FOR 2 MINUTES:	ACCEPT		REJECT		N/A	

ENCLOSURE 2.2.3 - NAVSUP Publication 538, Fig. 6-1, MHE Safety

Certification Form

LOAD TEST (Aerial Work Platform)	8-7.6	150% RATED LOAD HELD FOR 2 MINUTES:	ACCEPT		REJECT		N/A	
KING PIN (Straddle Carrier)	6-6.13	VISUAL INSPECTION:	ACCEPT		REJECT		N/A	
LIFTING WEIGHT TEST (Straddle Carrier)	6-6.14	100% RATED LOAD:	ACCEPT		REJECT		N/A	
OVERLOAD WEIGHT TEST (Except Pallet Trucks and Straddle Carriers)	6-5.3	AFTER REPAIRS/MODIFICATIONS AFFECTING LOAD-BEARING COMPONENTS	YES		NO		N/A	
	6-7	100% LOAD HELD FOR 2 MINUTES:	ACCEPT		REJECT		N/A	
		150% LOAD HELD FOR 2 MINUTES:	ACCEPT		REJECT		N/A	
LIFT EYES (Except Straddle Carriers)	6-5.4	AFTER REPAIR/REPLACEMENT	YES		NO		N/A	
	6-8	150% WEIGHT OF MHE HELD FOR 2 MINUTES:	ACCEPT		REJECT		N/A	

THIS IS TO CERTIFY THAT THE ABOVE MHE WAS INSPECTED AND TESTED IN ACCORDANCE WITH NAVSEA SW023-AH-WHM-010.

MECHANIC/MAINTENANCE PROVIDER:

PRINT FULL NAME	SIGNATURE	DATE

CERTIFIED BY:

PRINT FULL NAME	SIGNATURE	DATE

THIS 18 MONTH CERTIFICATION EXPIRES ON: _____

MONTH/YEAR