



MISTRAS

Asset Protection Solutions

Services
Division

AERIAL LADDER INSPECTION REPORT

Reference Document: NFPA 1911 Latest Revision

Page 1 of 17

580T-RPT-001 Rev. 4

Job Number: M76475-40798100

Inspection Date: 3-31-20

Fire Department: Rochester Area Volunteer Fire Department/ Glick FE

Address: 620 Connecticut Ave. Rochester PA. 15074

Persons Contacted: John @ Glick

Chief: _____

Operator: _____

Manufacturer: Pierce

Year of Manufacture: 11-89

Chassis: _____

Manufacturer: Pierce Arrow

Chassis S/N: 1P9CAD1J9KAO40789

Aerial S/N: E-5119/981101

Engine: _____

Manufacturer: Detroit Diesel

Model Number: 8V92 TA

GVW: _____

Front: 19000

Rear: 22000

Rear Tandem: 22000

Weather Conditions: _____

Temperature: 42 Degrees

Wind: 1-3 MPH

Inspector: A.Loft

Model Number: 105' PAL/ S105R4T

Unit: _____

Number: Ladder 23

Mileage: 14968

Hour Meter Reading: Eng: 2573 Aerial: 957

Transmission: _____

Manufacturer: Allison

Model Number: HT 740

Ladder: _____

Type: 4 S 105' AL

Material: Carbon Steel

Digitally signed

by Alex Loft

Date:

2020.03.31

18:27:41 -04'00'

Locations Nationwide

Aerial Device & Fire Apparatus Inspection and Certification



		Accept	See Notes	N/A
1.0	Service Records			
1.1	The aerial ladder's service records shall be checked for any reports that may indicate defective conditions.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.0	Rotation Bearing Mounting Bolts			
2.1	Inspect all accessible bolts for proper grade and installation as specified by the apparatus manufacturer.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.2	Using a properly calibrated torque wrench, verify that the bolt torque on all accessible bolts meets the apparatus manufacturer's specifications.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NDT 2.3	Inspect all accessible bolts for internal flaws.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.0	Torque Box Mounting To Frame			
3.1	If the torque box is bolted to the frame, inspect all accessible bolts for proper grade and installation as specified by the apparatus manufacturer.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2	Using a properly calibrated torque wrench, verify that the torque on all accessible bolts meets the apparatus manufacturer's specification, if the torque box is bolted to the frame.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.3	If the torque box is welded to the frame, visually inspect all accessible attaching welds for fractures.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NDT 3.4	If the torque box is bolted to the frame, inspect all bolts for internal flaws.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NDT 3.5	If the torque box is welded to the frame, inspect all accessible attaching welds.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.0	Rotation Gear and Bearing			
4.1	Inspect the rotation gear for missing or damaged teeth, pinion-to-gear alignment, proper lubrication and backlash.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2	Record the inner-bearing race to outer bearing race clearance, if accessible, in accordance with the bearing manufacturer's procedures, and compare the clearance to the bearing manufacturer's specifications.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.0	Rotation Gear Reduction Box Mounting			
5.1	If the reduction box is bolted to the turntable inspect all bolts for the proper grade and installation as specified by the apparatus manufacturer.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.2	Using a calibrated torque wrench, verify that the torque on all bolts meets the apparatus manufacturer's specification, if the reduction is bolted to the turntable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.3	Visually inspect all accessible weldments for defects and welds for fractures.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NDT 5.4	If the reduction box is bolted to the turntable, inspect all bolts for internal flaws.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NDT 5.5	If the reduction box is welded to the turntable, inspect all reduction box attaching welds.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.0	Rotation Hydraulic Swivel			
7.1	Inspect the swivel for external hydraulic fluid leakage.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.0	Hydraulic Lines and Hoses in Turntable			
8.1	Inspect all hydraulic lines and hoses for kinks, cuts and abrasions, and hydraulic fluid leakage at connectors and fittings.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



		Accept	See Notes	N/A
9.0	Elevation, Extension and Rotation Lock			
9.1	Inspect the manual valve elevation, extension and rotation lock for external hydraulic fluid leakage.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9.2	Test the manual valve elevation lock for proper operation by engaging the lock and then attempting to raise and lower the ladder with the main hydraulic system operating. No detectable movement shall occur as determined by visual inspection.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9.3	Test the manual valve elevation lock for proper operation by engaging the lock and then attempting to extend or retract the ladder with the main hydraulic system operating. No detectable movement shall occur as determined by visual inspection.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9.4	Test the manual valve rotation lock for proper operation by engaging the lock and attempting to rotate the turntable clockwise and counterclockwise with the main hydraulic system. The movement shall not exceed the manufacturer's specifications.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10.0	Signs			
10.1	Ensure that all signs are in place and legible.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.0	Power Takeoff (PTO)			
11.1	Inspect the power takeoff for external hydraulic fluid leakage, proper operation (engagement and disengagement) and warning light inside the cab.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.0	Hydraulic Pump			
12.1	Inspect the hydraulic pump for external hydraulic fluid leakage.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.0	Collector Rings			
13.1	Inspect the collector rings for foreign material buildup on rings, if accessible.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13.2	If accessible, inspect the collector ring terminals for damage.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13.3	Conduct tests to ensure the proper operation of the collector rings by rotating the aerial device while electric-powered devices are in operation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.0	Elevation Cylinder Anchor Ears and Plates			
14.1	Visually inspect the elevation cylinder anchor ears and plates for defects and attaching welds for fractures.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NDT 14.2	Inspect the elevation cylinder anchor ears and plate attaching welds.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.0	Elevation Cylinder Pins			
15.1	Inspect the cylinder pins for alignment, proper installation, lubrication, operation and retention.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NDT 15.2	Inspect cylinder pins for internal flaws.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



		Accept	See Notes	N/A
16.0	Elevation Cylinders			
16.1	Inspect the cylinder rods for pitting, scoring and other defects.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.2	Inspect the cylinder rod to barrel seal and the end gland seal for excessive external fluid leakage.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.3	With the hydraulic oil at ambient temperature, subject the cylinders to a drift test by placing the aerial device at a 60 degree elevation, full extension, marking the cylinder position, closing manually operated locking valves, and allowing the device to stand for one (1) hour with the engine off. The results of such a test shall not exceed the manufacturer's specifications for allowable cylinder drift.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.0	Holding Valves on Elevation Cylinders			
17.1	Inspect the holding valves for external hydraulic fluid leakage.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18.0	Operating Controls			
18.1	Inspect the operating controls for missing or damaged control handles, proper identification and hydraulic fluid leakage.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18.2	Verify that the controls operate smoothly, return to neutral position when released and do not bind during operation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19.0	Load Limit Indicators			
19.1	Inspect the load limit indicators for proper operation and legibility.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20.0	Emergency Hand Crank Controls			
20.1	Inspect the hand crank control for proper operation.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
21.0	Auxiliary Hydraulic Power			
21.1	Inspect the auxiliary hydraulic power for proper operation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22.0	Turntable Alignment Indicator			
22.1	Verify the presence of a turntable alignment indicator.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23.0	Throttle Control			
23.1	Verify that the throttle control is operable and record the operating RPM using a tachometer or a revolution counter (if so equipped) and a stopwatch.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24.0	Communications System			
24.1	Inspect the communication system for proper installation and proper operation.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
25.0	Relief Hydraulic Pressure			
25.1	Verify that the main pump relief hydraulic pressure does not exceed the manufacturer's specifications.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26.0	Unit Main Frame			
26.1	Visually inspect the main frame for any cracks, bends, dents, twists or other weldment defects and any welds for fractures.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NDT 26.2	Inspect all main frame welds.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		Accept	See Notes	N/A
27.0	Transmission/Aerial Device Interlocks			
	27.1 If interlocks are provided that prevent operation of the aerial device until the chassis spring brakes have been set and the transmission is properly disengaged, verify that the interlocks are operating properly.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28.0	Engine Speed Interlocks			
	28.1 If interlocks are provided that allow operation of the engine speed control only after the spring brakes have been set and the transmission is properly positioned, verify that the interlocks are operating properly.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29.0	Breathing Air Systems			
	29.1 Verify that the breathing air system is properly installed including the integrity of the air cylinder mounting, the regulator and the airlines from the air cylinder(s) to the top of the aerial device.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	29.2 Verify that all the component parts of the system are present and in serviceable condition.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	29.3 Visually inspect the air cylinder mounting brackets for defects and weld for fractures.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
NDT	29.4 Inspect all welds on air cylinder mounting brackets.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	29.5 Check that the air pressure regulator is set at the apparatus manufacturers recommended pressure.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
30.0	Stabilizer Structural Components			
	30.1 Visually inspect all stabilizer components for defects and weld for fractures.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NDT	30.2 Inspect all stabilizer structural component welds.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31.0	Stabilizer Pads			
	31.1 Verify that the stabilizer pads are present, of proper construction and in serviceable condition.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32.0	Stabilizer Mounting to Frame or Torque Box			
	32.1 Visually inspect the stabilizer to frame or torque box attachment for defects such as weld cracks, dents and bends.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NDT	32.2 If welded, inspect the stabilizer to frame or torque box mounting welds.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	32.3 If bolted, inspect all bolts for proper fastener grade and installation as specified by the apparatus manufacturer.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	32.4 Verify that the torque on all bolts meets the apparatus manufacturer's specification using a properly calibrated torque wrench.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NDT	32.5 Inspect all bolts for internal flaws.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33.0	Hydraulic Lines and Hoses in Stabilizer System			
	33.1 Inspect the hydraulic hose lines for kinks, cuts and abrasions and leakage at connector and fittings.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34.0	Stabilizer Interlock And Warning Device			
	34.1 Verify that the interlock system is operating properly.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		Accept	See Notes	N/A
35.0	Stabilizer Extension Cylinder Pins and Hinge Pins			
	35.1 Inspect all stabilizer cylinder pins and hinge pins for proper installation, lubrication, operation and retention.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NDT	35.2 Inspect all stabilizer pins and hinge pins for internal flaws.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36.0	Stabilizer Extension Cylinder			
	36.1 Inspect the stabilizer extension cylinder rods for pitting and scoring and other defects.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	36.2 Inspect the cylinder rod to barrel seal and the end gland seal for excessive external fluid leakage.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	36.3 With the hydraulic oil at ambient temperature and with the stabilizer's cylinders properly set, measurements shall be taken to determine the amount of drift present in one (1) hour with the engine off. The results shall not exceed the manufacturer's specifications for allowable stabilizer cylinder drift.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37.0	Holding Valves on Extension Cylinders			
	37.1 Inspect the holding valves for external leakage.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38.0	Operating Controls			
	38.1 Verify that the controls operate smoothly, return to the neutral position (if designed to do so) when released, do not bind during operations and are free of hydraulic fluid leakage.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39.0	Diverter Valve			
	39.1 Inspect the diverter valve for external hydraulic fluid leakage.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40.0	Positive Stops and Alignment			
	40.1 Inspect the mechanical stabilizers for proper operation of the positive stops to prevent over extension.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41.0	Stabilizer Deployment			
	41.1 If the stabilizer system is hydraulically operated, verify that the system can be deployed within the time.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42.0	Manual Spring Locks			
	42.1 Inspect the condition and operation of stabilizer manual spring locks for stowed power.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
43.0	Tractor Spring Lockout Device			
	43.1 Inspect the spring lockout device for any discontinuities and for proper operation.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
44.0	Aerial Ladder Weldments			
	44.1 Visually inspect all accessible aerial ladder weldments for defects and welds for fractures.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	44.2 Inspect all accessible welds on the ladder.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		Accept	See Notes	N/A
45.0	Aerial Ladder Fasteners			
45.1	All aerial ladder structural fasteners and fastened connections shall be visually inspected for cracked fasteners and material cracks around the fasteners.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46.0	Ladder Section Alignment			
46.1	Measurements shall be taken to determine the amount of ladder section twist or bow in the aerial ladder. Results shall not exceed manufacturer's specification for allowable ladder section twist, bow or side play.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47.0	Hydraulic, Pneumatic and Electrical Lines In Ladder Sections			
47.1	Inspect all lines for proper mounting, wear, cracking, kinks and abrasions. Frame designated by the aerial device manufacturer.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48.0	Modifications or Unauthorized Repairs			
48.1	Inspect the aerial ladder for modifications or repairs unauthorized by the manufacturer.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49.0	Top Rails			
49.1	Inspect the top rails for straightness or any signs of misalignment.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NDT 49.2	Hardness reading shall be taken intervals of 28" (710mm) or less along the entire length of both top rails of aluminum ladders. Results of this test shall be compared with the manufacturer's specifications for the hardness of the material used for construction of the top rail.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
50.0	Base Rails			
50.1	Inspect the base rail for straightness and any signs of wear, ironing, dents and corrosion.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NDT 50.2	Inspect the bottom of all hollow I-beam base rails to determine the thickness of the rail. Results shall be not less than the manufacturer's minimum specifications.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NDT 50.3	Hardness reading shall be taken intervals of 28" (710mm) or less along the entire length of both base rails of aluminum ladders. Results of this test shall be compared with the manufacturer's specifications for the hardness of the material used for construction of the base rail.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
51.0	Rungs			
51.1	Inspect all rungs of the aerial ladder for straightness, signs of fly lock damage, damaged or loose rung covers and rung cap castings, and signs of cracks or missing rivets, if applicable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52.0	Folding Steps			
52.1	Visually inspect the folding steps and folding step mounting brackets for defects and welds for fractures.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52.2	Inspect all welds on the folding step(s) and folding step mounting brackets.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53.0	Rollers			
53.1	Inspect all rollers for proper lubrications, operation and any signs of wear.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

		Accept	See Notes	N/A
54.0	Guides, Babbitts, Wear Strips, Pads And Slide Blocks			
54.1	Visually inspect the guides for cracked welds; lose rivets alignment and any irregularities. Inspect babbitts for signs of wear. Inspect wear strips, pads and slide blocks for wear, gouging and proper mounting.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55.0	Extension Sheaves			
55.1	Inspect all sheaves for signs of wear, free movement during operation, proper retainers and lubrication.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55.2	Visually inspect all extension sheave mounting brackets for defects and welds for fractures.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NDT 55.3	Inspect all welds of extension sheave mounting brackets.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
56.0	Extension Cables			
56.1	Inspect extension/retraction cables to assure proper tension in accordance with manufacturers recommendations.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
57.0	Extension/Retraction Motor			
57.1	Inspect the extension/retraction motor for signs of external hydraulic fluid leakage and, where applicable, brake wear, and brake alignment with the shaft.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
58.0	Cable Separation Guide			
58.1	During operation of the aerial ladder, visually inspect the cable separation guide for free travel and any signs of misalignment.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
59.0	Winch Holding Capacity			
59.1	Inspect the winch for holding capacity by fully elevating the aerial ladder and extending it 10 feet (3 m). Winch slippage shall be measured for a five-minute period. Slippage shall not exceed manufacturer's specification.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
60.0	Brake Holding Capacity			
60.1	Inspect the brake holding capacity of the extension motor by fully elevating the aerial ladder and extending it 10 feet (3m). Brake slippage shall be measured for a five-minute period. Slippage shall not exceed manufacturer's specification.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
61.0	Extension And Elevation Indicators			
61.1	Inspect the elevation and extension indicators for legibility, clarity and accuracy.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
62.0	Fly Locks			
62.1	Inspect the fly-lock mechanisms for proper mounting, alignment, lubrication and operation.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
63.0	Ladder Cradle			
63.1	Inspect the aerial ladder cradle for wear and proper alignment.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
64.0	Ladder Bed Lock			
64.1	Inspect the ladder bed lock mechanism and hydraulic lines for proper mounting, signs of wear and hydraulic fluid leakage at fittings.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

		Accept	See Notes	N/A
65.0	Stop Mechanism			
65.1	Inspect stop mechanisms to ensure that they prevent over extension or over retraction of the aerial ladder.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
66.0	Maximum Extension Warning Device			
66.1	During operation of the aerial ladder, verify the proper operation of the audible device to warn of the approach to maximum extension.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
67.0	Ladder Illumination			
67.1	Inspect the operation of the lights that are used to illuminate the aerial ladder.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
68.0	Extension Cylinder Anchor Ears and Plates			
68.1	Visually inspect the extension cylinder anchor ears and plates for defects and the attaching welds for fractures.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NDT 68.2	Inspect the attaching welds of the extension cylinder anchor ears and plates.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
69.0	Extension Cylinder Pins			
69.1	Inspect the cylinder pins for proper installation and retention.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NDT 69.2	Inspect the cylinder pins for internal flaws.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
70.0	Extension Cylinder(s)			
70.1	Inspect the cylinder rods for pitting, scoring and other defects.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
70.2	Inspect the cylinder rod to barrel seal and the end gland seal for excessive external fluid leakage.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
70.3	With the hydraulic oil at ambient temperature, subject the cylinder(s) to drift by placing the aerial device a 60 degree elevation, full extension, marking the cylinder piston or the second section in relation to the base section, and allowing the ladder to stand for one hour with the engine off. The results shall not exceed the manufacturer's specifications for allowable cylinder drift.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
71.0	Holding Valves on Extension Cylinder			
71.1	Inspect the holding valves for external and internal hydraulic fluid leakage.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
72.0	Tip Controls			
72.1	Check that the control handles are not damaged or missing, functions are identified, and operating instructions and warnings are posted.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
72.2	Verify that the controls operate smoothly, return to neutral when released, and do not bind during operation.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
72.3	Verify that the turntable or lower controls will override the tip controls.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
72.4	Verify that any safety devices that are designed to operate in conjunction with the tip controls are fully operational. (5) If the aerial ladder was built to the 1996 or a later edition of NFPA 1901, <i>Standard for Automotive Fire Apparatus</i> , verify that the speed of the aerial ladder, when being operated from the tip controls, does not exceed the speeds allowed in the edition of NFPA 1901 to which the aerial ladder was manufactured.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		Accept	See Notes	N/A
73.0 Operational Tests				
73.1	A complete cycle of aerial ladder operation shall be carried out after starting the engine, setting the stabilizers, and transmitting power to the ladder. The ladder shall be fully elevated out of the bed, rotated 90 degrees and extended to full extension. The ladder shall complete this test smoothly and without jerking or undue vibration within the time allowed by the standard in effect at the time of manufacture.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
73.2	The ladder shall be retracted, the turntable rotation completed through 360 degrees and then the ladder lowered to its bed, after which a thorough inspection shall be made of all moving parts. Special attention shall be given to the security and adjustment of the ladder cables or chains. The test shall demonstrate successful operation of all ladder controls.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
74.0 Load Testing				
74.1	Tests shall be conducted when wind velocity does not exceed manufacturer specifications. A close watch shall be maintained during all load tests. Only those personnel essential to conduct the test shall be permitted near the apparatus during the test. If the ladder shows any excessive twist at any time, the test shall be discontinued immediately and the aerial ladder shall be placed out of service and the condition shall be reported in writing to the manufacturer. The aerial ladder shall be repaired in accordance with the manufacturer's written recommendations and fully tested before it is placed back in service.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
75.0 Horizontal Load Test				
75.1	<p>The aerial turntable shall be level. The aerial apparatus vehicle shall be on a firm level surface or road. All stabilizers shall be down and have a firm footing on the ground. A test cable hanger shall be attached to the top rung of the top ladder section and properly centered.</p> <p>The maximum rated live load in the horizontal position shall be determined from the manufacturer's load chart or operator's manual. If full extension is not permitted in the horizontal position with a specified live load, then the maximum permissible extension with a specified live load shall be used for purpose of this test.</p> <p>For single chassis apparatus the ladder shall be rotated, if necessary, Until the ladder is positioned over the rear and parallel to the vehicle centerline. For tractor-drawn apparatus, the ladder shall be positioned in the most stable position as recommended by the manufacturer.</p> <p>The ladder shall be placed in the horizontal position and extended to full extension or maximum permitted extension. The base section shall not be allowed to rest in the bed.</p> <p>The ladder section locks, either manual pawls or hydraulic holding valves, shall be properly applied.</p> <p>The elevation cylinder integral holding valve or shutoff safety valve shall be properly closed or applied.</p> <p>The ladder section twist shall not exceed the manufacturer's tolerance.</p> <p>A weight equal to the manufacturer's specified rated live load, shall be gradually applied to the top rung of the aerial ladder by utilizing the test weight container or other suitable means of applying the weight.</p> <p>NOTE: The total weight of the supporting hangers, containers, etc., and test weight shall be taken as a whole and shall not exceed the rated live load. Dropping the weights and shock loading the ladder shall not be permitted.</p> <p>The test weight shall be sustained by the unsupported aerial ladder for five minutes.</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



The test weight shall hang freely from the tip of the aerial ladder. If the test weight hanger and ladder deflection are such that the test weight comes to rest on the ground, it shall be permissible to raise the ladder elevation slightly above the horizontal position.

WARNING: At no time during the load test shall the ladder be moved with the test weight applied.

After removal of the test weight, a complete visual inspection shall be made of all load-supporting elements. Any visually detectable signs of damage, permanent deformation or twist exceeding the manufacturer's allowance shall constitute noncompliance with the load test requirements.

76.0 Maximum Elevation Load Test

Accept See Notes N/A

76.1 The aerial turntable shall be level. The aerial apparatus vehicle shall be on a firm, level surface or road. All ground stabilizers shall be down and have a firm on the ground.

A test cable hanger shall be attached to the top rung of the top ladder section and properly centered.

The maximum rated live load in the maximum elevated position at full extension shall be determined from the manufacturer's load chart or operator's manuals.

The ladder shall be rotated, if necessary until the ladder is positioned over the rear and parallel to the vehicle centerline. Midship mounted devices may have to be rotated slightly off of the vehicle centerline in order to apply the test load without interference with the body of the apparatus.

The ladder shall be elevated to maximum elevation and fully extended.

The ladder section locks, either manual pawls or hydraulic holding valves shall be properly applied.

The elevation cylinder integral holding valve or shutoff safety valve shall be properly closed or applied.

The ladder section twist shall not exceed the manufacturer's tolerance.

A weight equal to the manufacturer's specified rated live load shall be gradually applied to the top rung of the aerial ladder by utilizing a test weight container or other suitable means of applying the weight. The weight shall be suspended by cable and shall be not more than 3 feet (1 m) above the ground.

NOTE: The total weight of the supporting hangers, containers, etc, and test weight shall be taken as a whole and shall not exceed the rated live load. Dropping the weights and shock loading the ladder shall not be permitted.

The test weight shall be sustained by the unsupported aerial ladder for five minutes. The test weight shall hang freely from the tip of the aerial ladder.

WARNING: At no time during the load test shall the ladder be moved with the test weight applied.

After removal of the test weight, a complete visual inspection shall be made of all load-supporting elements. Any visually detectable signs of damage, permanent deformation or twist exceeding the manufacturer's allowance shall constitute noncompliance with the load test requirements.

		Accept	See Notes	N/A
77.0	Water System Test			
	NOTE: The following examination and test shall apply only to permanently piped aerial ladder pipes.			
	77.1 The waterway system shall be inspected for proper operation of all components. It shall be free of rust, corrosion, other defects or blockage.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	77.2 The waterway attaching brackets shall be inspected for loose bolts, weld fractures or other defects.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NDT	77.3 Inspect all attaching welds.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	77.4 Pressure Test (Turntable Swivel) The aerial ladder shall be positioned between 0 and 10 degrees elevation and fully retracted. The water system shall be filled with water and the valve at the discharge end closed. If there is not a valve at the discharge end, a valve shall be attached for the purpose of this test. NOTE: For safety reasons, all air must be removed from the system. The pressure on the system shall be raised to the water system manufacturer's maximum rated working pressure and maintained for the duration of the test. The aerial ladder shall be raised to full elevation and rotated 360 degrees. The water system, including the turntable swivel, shall be checked for leaks. Care shall be taken not to overheat the water pump. The water system shall operate properly and with an absence of leaks during these	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	77.5 Pressure Test (Waterway Seals) The aerial ladder shall be positioned between 0 and 10 degrees elevation and fully extended to its maximum permissible limit. The water system shall be filled with water and the valve at the discharge end closed. If there is not a valve at the discharge end, a valve shall be attached for the purpose of this test. NOTE: For safety reasons, all air must be removed from the system. The pressure on the system shall be raised to the water system manufacturer's maximum rated working pressure and maintained for the duration of the test. The aerial ladder shall be raised to full elevation and rotated 360 degrees. The water system, including the turntable swivel, shall be checked for leaks. Care shall be taken not to overheat heat the water pump. The water system shall operate properly and with an absence of leak during these tests.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	77.6 Relief Valve If the waterway system is equipped with a relief valve, this relief valve shall be checked to verify that it is operational at the waterway manufacturer's recommended pressure setting.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	77.7 Pressure Gauge If the waterway system is equipped with a water pressure gauge(s), each water pressure gauge shall be checked for accuracy. Pressure gauges shall be checked at least 3 points, including 100 psi, 150 psi, and 200 psi. Any gauge that reads off by more than 10 psi shall be repaired or replaced.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Data Records

1. Rotation Bearing Mounting Bolts: Bolt Grade: 8 Size: .88" Torque: 400 Ft. lbs.
2. Torque Box Mounting to Frame: Bolt Grade: 8 Size: .75" Torque: 300 Ft. lbs.
3. Rotation Gear and Bearing: Backlash: .009 Bearing Race Clearance: .031
4. Pinion to Bullgear Horizontal Alignment: Acceptable
5. Rotation Gear Reduction Box: Bolt Grade: 8 Size: .56" Torque: 100 Ft. lbs.
6. Elevation Cylinders Drift: Left: 1/4" Right: 1/4"
7. Relief Hydraulic Pressure: Main: 2100 PSI Down: 2025 PSI Retract: 2050 PSI Extension: 2150 PSI
8. Breathing Air Pressure Regulator Setting: X PSI Bottle: X PSI
9. Stabilizer Mounting Bolts: Bolt Grade: 8 Size: .75" Torque: 300 Ft. lbs.
10. Stabilizer Cylinders Drift: LF: X RF: X LM: 0 RM: 0 LR: 0 RR: 0
11. Ladder Section Twist: Base: 1 2nd: 1 3rd: 1 4th: 1 5th: X Total: 3LR
12. Ultrasonics Test: All Pins: Accept: See Notes: N/A: All Bolts: Accept: See Notes: N/A:
13. Welds inspected - NDT: Stabilizers: Accept Turntable: Accept Ladder Sections: Accept
14. Top Rail Hardness Min/Max: Base X/X 2nd X/X 3rd X/X 4th X/X 5th X/X
15. Base Rail Hardness Min/Max: Base X/X 2nd X/X 3rd X/X 4th X/X 5th X/X
16. Extension Winch Drift: X" Extension Winch Motor Brake Drift: X"
17. Extension Cylinders Drift: Left: 1/8" Right: 1/8"
18. NFPA Time Test: 104 Seconds
19. Waterway Relief Valve Settings: X PSI
20. Base Rail Thickness Readings: Min: Base X" 2nd 160" 3rd 122" 4th 121" 5th X"
Max: Base X" 2nd 165" 3rd 125" 4th 125" 5th X"
21. Horizontal Load Test: 500 Lbs. Tip Load
22. Maximum Elevation Load Test: 500 Lbs. Tip Load
23. High Speed: 600/1400 RPM
24. Up 48 Sec. 2000 PSI CC 130 Sec. 2000 PSI
Out 70 Sec. 2000 PSI C 134 Sec. 2000 PSI
In 49 Sec. 1950 PSI Down 44 Sec. 1950 PSI

NDT Equipment

Magnetic Particle						
Code/Specification		Procedure			Acceptance Criteria	
ASTM E709		100-MT-002 REV 8			AWS D1.1	
Material & Thickness: Steel/Various		Medium		Technique		
Magnetizing		<input checked="" type="checkbox"/> Visible <input checked="" type="checkbox"/> Dry		<input type="checkbox"/> AC <input checked="" type="checkbox"/> DC		
Manufacturer:	Parker	Color: Yellow		<input checked="" type="checkbox"/> Yoke [Spacing: 2-6"]		
Model:	DA 400	Type: 2		<input checked="" type="checkbox"/> Continuous <input type="checkbox"/> Residual		
Serial No:	9139	Batch 16B087		White Light Source: Flashlight		
Cal. Due Date:	9-02-20	Pre/Post Clean Method: SKC		Other Equipment:		
Liquid Penetrant						
Code/Specification		Procedure			Acceptance Criteria	
ASTM E165		100-PT-004 Rev 7			AWS D1.2	
	Manufacturer	Type	Batch Number(s)	Application Method	Process Time (minutes)	
					Pre-clean Dry Time: 10	
Cleaner:	Magnaflux	SKC-S	17K13K	Spray/Wipe	Penetrant Dwell Time: 10	
Penetrant:	Magnaflux	SKL-SP2	18FO9K	Brushed	Developer Time: 10	
Developer:	Magnaflux	SKD-S2	18K06K	Sprayed	Post Clean Method: Wiped	
Developer Form: <input type="checkbox"/> a. Dry Powder <input type="checkbox"/> b. Water Soluble <input type="checkbox"/> c. Water Suspended <input checked="" type="checkbox"/> d. Nonaqueous Wet						
Ultrasonic						
Code/Specification		Procedure			Acceptance Criteria	
ASTM E797		100-UT-003 REV 10			No Cracks-Elongated Material	
Instrument			Setup Data			
Model	Serial No.	Cal. Due Date	Cal. Standard:	Step Wedge	Serial No.	3943 13
Pocket UT	862011 8906	Daily	Scan Equipment:	<input type="checkbox"/> Automatic	<input checked="" type="checkbox"/> Manual	
Transducer			Couplant:	Echo	Batch No.	60103
Frequency	Size	Serial No.	Cable Type:	Coaxial		
5 MHZ	3/8"	510	Cable Length:	48"		
Visual						
Code/Specification		NDT Procedure			Acceptance Criteria	
AWS D1.1 / AWS D1.2		100-VT-004 Rev. 3 / 100-VT-005 Rev. 0			AWS D1.1 / AWS D1.2	
Material	Weld Process	Temp. Gun Serial No.		Temperature		
Steel /Aluminum	Various	170975143		Ambient		
Technique		Surface Condition		Visual Aids		Supplemental Lighting
<input checked="" type="checkbox"/> Direct Visual <input type="checkbox"/> Remote Visual		As Welded / Smooth		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Access within 24" & 30°		1/32" Line/Simulated Imperfections Used		Dimensional Aids		Light Meter Serial No.
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		141100225
½" Torque Wrench S/N & Cal. Due Date		¾" Torque Wrench S/N & Cal. Due Date		Dial Indicator S/N & Cal. Due Date		
DGJ2395 2-20-20		DSC19102 2-20-20		1982 2-20-20		
Technician Name & Level		Customer (if applicable):		Reviewed By (if applicable):		
A.Loft Level 11						



Inspection Notes:

Item	Category	Comment
1	C	Intercom inop
2	C	24' Ext ladder strapped thru all 4 sections of ladder. 1 st rung is bent on ground ladder
3	C	All sections cables rubbing rungs
4	C	Center rear outrigger control compartment 1 panel light inop
5	C	Drivers side collins spotlight at tip of ladder has 1 element inop
6	R	Raise control function inop using tip controls <i>(opted to not Repair)</i>

Categories:

- R = Required Items:** Items that do not meet Mistras specifications, manufacturer's specifications and applicable NFPA standards are items which Mistras mandates be repaired or replaced before issuance of an Inspection certificate.
The location of these items may be found by the general description below. Weld discontinuities, if any, are marked with felt pen at their specific location by our inspectors. Left and right, as listed, are viewed standing on the turntable looking up at the ladder.
The ladder sections are numbered from the bottom up, base assembly being 1st section, 2nd section, 3rd Section and 4th section. Rungs, vertical and diagonal support members (truss-members) on each section are numbered starting at the base of each ladder section with number one and increasing in number to the top of each ladder section.
Left and right on the vehicle chassis are viewed as left being the driver's side, and the right being the Officer's side.
Mistras will allow a maximum of sixty (60) calendar days from the date of this report for items listed under this category to be repaired or replaced. If this cannot be completed within this 60-day time frame, it is necessary that you notify our office prior to the lapse of this period at 1-800-333-8629.
- C = Recommended Items:** These are items, which we recommend be repaired, replaced or installed, or preventive maintenance procedures initiated and implemented.
- I = Informational Items:** These are items which we have found to be in noncompliance with today's standards, or items which should be checked periodically, or items listed solely for your general information.