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Practice:

1.0 **INTRODUCTION**

1.1 This procedure is to be used as a standard for maintenance testing of vehicle mounted aerial equipment. It is particular to stability testing, structural load testing, rated load testing, and unloaded functional testing.

2.0 **DEFINITIONS**

- 2.1 **Rated Load Capacity** the maximum loads, as specified by the manufacturer, which can be lifted by the aerial device through the specific range of boom elevation and extension with specified options, and in consideration of stability requirements.
- 2.2 **Stability** a condition of a mobile unit in which the sum of moments which tend to overturn the unit is less than the sum of the moments tending to resist overturning.
- 2.3 **Structural Load Test** a design load specified by the Original Equipment Manufacturer or certified by a Professional Engineer to verify the ability of the machine and it's components to withstand the stresses imposed by applied loads.

3.0 **REFERENCE CODES**

The following procedure is to be used in conjunction with:

- 3.1 CSA C225 "Vehicle Mounted Aerial Devices".
- 3.2 ANSI / SIA A92.2 "Vehicle Mounted Elevating and Rotating Aerial Devices" (or most current issue).
- 3.3 ANSI A10.31 "Construction and Demolition Operations Safety Requirements, Definitions and Specifications for Digger Derricks" (or most current issue).



Fleet Services

Revised by: A. Peck

Approved by: J. Abraham

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| 4.0 TES | FREQUIRE | MENTS | | |
| 4.1 | Function T | Sest (No-Load) | | |
| | | t is to be done in accordance with the operational guidelines of the original ipment manufacturer. | | |
| | 4.1.2 Uni | t is to be operated from the lower controls first. | | |
| | | completed from the lower controls and the test personnel are satisfied with the ational conditions, the unit is to be operated from the upper controls. | | |
| | | e the operational safety considerations when doing this test as listed in, but not ted to, Section 5. | | |
| 4.2 | Stability L | oad Test | | |
| | 4.2.1 Test | t to be done in accordance with VP 03 13. | | |
| | 4.2.2 Uni | t is to be operated from the lower controls only. | | |

4.2.3 Note the operational safety considerations when doing this test, as listed in, but not limited to, Section 5.

4.3 Rated Load Test

- 4.3.1 Test is to be done in accordance with the operational guidelines of the original equipment manufacturer and the applicable standard from Section 3.
- 4.3.2 Unit is to be operated from the lower controls first.
- 4.3.3 Test personnel shall verify the functions of the lower controls prior to lifting the test weight. It shall be noted that when operated from the lower controls, the test weight must be increased by the bucket capacity times the number of buckets to allow for operator's weight. Secure the weight in the bucket(s) (lanyard).
- 4.3.4 Once completed from the lower controls and the test personnel are satisfied with the operational conditions, the unit is to be operated from the upper controls, if necessary, to verify the upper controls.

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| | 4 | weigh | personnel shall verify the functions of the upper controls prior to lifting the test t . When operated from the upper controls, the test weight must be reduced by acket capacity times the number of baskets to allow for the operator(s) in the $t(s)$. |
| | 4 | | the operational safety considerations when doing this test as listed in, but not d, Section 5. |
| 4.4 | 4 S | Structural L | oad Test |
| | 4 | | o be done in accordance with the recommendations of the original equipment facturer. |
| | 4 | 4.4.2 Unit i | s to be operated from the lower controls only. |
| | 4 | | the operational safety considerations when doing this test, as listed in, but not d to, Section 5. |
| 5.0 SA | FET | Y CONSIDI | ERATIONS |
| 5.1 | r t a | naintenance he employee my doubt as | a minimum of two (2) qualified persons present during any of the stability or testing. One person shall be designated employee in charge. In most cases it is responsible for the inspection that is deemed "employee in charge". If there is to whom the employee in charge is, the two (2) qualified persons shall report to for before doing the test. |
| 5.2 | | • | n annually calibrated dynamometer when lifting test weights to provide a means he test load and also provide an indication of force being applied during the lift. |
| 5.3 | 3 1 | Verify the acc | curacy of the boom angle indicator with a calibrated angle indicator. |
| 5.4 | 1 I | Test weights | are to be stored in such a manner that they cannot become frozen to the ground. |
| 5.5 | 5 1 | Verify test w | eights are not frozen to the ground. |
| 5.6 | | Test weights ndicate their | are to be verified by a Professional Engineer and permanently marked to weight. |
| 5.7 | | | te personal safety equipment is to be worn by the test personnel, i.e. hard hart, s, gloves, safety shoes, safety harness and lanyard. |

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- 5.8 The bucket liner shall be cleaned out prior to testing, i.e., all tools and tool holders, tool trays, etc.
- 5.9 Upon completion of the test the "employee in charge" and the supervisor/acting supervisor will review the test, document the results and both sign-off on the test completion record.

5.10 Whenever users observe that any component of an aerial device is defective or is not functioning properly, they shall immediately discontinue the use and shall report the fact to their Supervisor. Without limiting the generality of this duty to report defects and improper operation, they shall report any of the following:

- (a) uncontrolled motion;
- (b) motion which is not responsive to actuation of a control;
- (c) any loose connection of any type;
- (d) any evidence of improper adjustment;
- (e) any structural damage of fiberglass components;
- (f) any evidence of deformation of any part;
- (g) broken wires or fraying of the wire ropes;
- (h) missing fasteners of any type; and
- (i) any evidence that the unit is not stable.

The lift operation will remain terminated until the issue is resolved. Input from the supervisor/acting supervisor, fleet specialist shall be requested.

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| AERIAL EQUIPMENT 2012 01 13 MAINTENANCE TESTING RECORD FOR DERRICKS & AERIAL DEVICES WORK ORDER | P 03 30 | 3 | | | |
| MAINTENANCE TESTING RECORD FOR DERRICKS & AERIAL DEVICES WORK ORDER VEHICLE # EMPLOYEE IN CHARGE MAKE OF DERRICK / AERIAL DEVICE MAKE OF DERRICK / AERIAL DEVICE SERIAL NUMBER OF DERRICK / AERIAL DEVICE and DATE OF TEST TESTED BY and DERRICKS AERIAL DEVICES CORNERMOUNT 1 BUCKET I DERRICKS AERIAL DEVICES CORNERMOUNT 1 BUCKET I CENTREMOUNT OVER REAR AXLE 1 BUCKET (MATERIAL HANDLING) I BUCKET-EQUIPPED 2 BUCKET (MATERIAL HANDLING) I BUCKET-EQUIPPED EQUIPPED WITH 2 OUTRIGGERS I BUCKET-EQUIPPED EQUIPPED WITH 4 OUTRIGGERS I Solution and rated load tests require "Test 1 - test for lower controls" "Test 2 - test for upper controls" Test 1 - test for lower controls" Structural Record Test Loads: A. Derrick / Digger Test now weight I B. Non-material handling aerial device Test two weight I I I Test two weight I I Te | 5 of 6 | | | | |
| MAINTENANCE TESTING RECORD FOR DERRICKS & AERIAL DEVICES WORK ORDER VEHICLE # EMPLOYEE IN CHARGE MAKE OF DERRICK / AERIAL DEVICE | | | | | |
| DERRICKS & AERIAL DEVICES WORK ORDER | ed: 20 | 012 01 13 | | | |
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| Record Test Loads: A. Derrick / Digger Test one weight | | 2) All 3) All | ests are performed on level j unction and rated load tests | ground require "Test 1 - test for lower controls" "Test 2 - test for upper controls" | |
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