

# FIELD SERVICE REPORT

Lucas Mistler · Field Service Engineer  
[Lucasmistler@yahoo.com](mailto:Lucasmistler@yahoo.com) 1-508-989-9807

## CUSTOMER INFORMATION

DATE: 26 MAY 2023

CUSTOMER: DAVID CAPONE

ADDRESS: SNOW HILL. DOVER, MA 02030

EXPECTATION AND LIMITATIONS OF THIS REPORT: VISUAL AND ELECTRICAL INSPECTION OF  
AB-1309 TOWER FOR DAVID CAPONE.

## DETAILS OF INITIAL FINDINGS

Upon my arrival at Snow Hill in Dover, MA I was greeted by Mr. David Capone and his Son. The AB-1309 Trailer tower was erect and supported. Mr. Capone stated the unit had been struck by lightning in the previous months. Upon Visual inspection around the unit there was evidence the 2/0 ground wire was damaged and indicated a large amount of electrical current had passed through the Tower. Furthermore there was arcing on a terminal on the control panel. Without the proper training, I was unable to climb and inspect the upper tower. However David Capone Sr. Climbed to assist with the motor testing.

## ELECTICAL/ELECTRONICS TESTING

The AB-1309 Trailer tower is powered by two large generators that produce 240 VDC three phase and then are transformed down to 120 VAC and 24 VDC. With the primary generator running the system was not producing 24 VDC needed to control the Tower relays. These relays are 24 VDC controlled/triggered to send AC voltage to the corresponding Electrical motors on the tower. Testing with a Calibrated Multi-Meter showed there was no 24 VDC being produced. Tracing the wiring back to the 120 VAC and 240 VAC supplies, I was able to verify there was voltage being created by the primary generator. I jumped the different circuits for all motors and there was no response.

## CONCLUSION

With no additional electrical connections being utilized to the AB-1309 Trailer tower, the surge of electricity caused by a lightning strike would cause damage to this extent. The lightning strike caused such a surge to damage the motors, safety circuits as well as the DC voltage control unit of the Tower trailer. With this system being dated it cannot be repaired without extensive wiring

and replacement parts. These parts are unavailable for purchase or repair. The system should be considered a total loss as it cannot be repaired for a reasonable price if at all.

## **ATTACHMENTS:**

Attachment 1: Calibration Certificate for Fluke 77 Series IV Multimeter

Pages: 2

To whom it may concern,

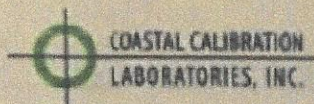
The above Field Service report was completed for Mr. David Capone on the 26<sup>th</sup> of May 2023. The report and attached files are a representation of the work completed by me, Lucas A. Mistler.

Upon arrival I completed a visual inspection and electronics inspection with the supplied schematics and paperwork that was on site and provided by Mr. Capone.

If you have any questions, please contact me at 1-508-989-9807.

Sincerely,

Lucas Mistler  
Field Service Engineer



# Certificate of Calibration

Certificate: CC200692

On-site Calibration: No

Customer: Repligen Corporation  
Contact: Joe Reale

Account No.: AN0350 (RC)

Manufacturer: Fluke  
Model: 77 Series IV  
Description: Multimeter  
Range: Calibration Information: September 2006 and Supplement 2007  
Accuracy: See Attached

Instrument ID: E4014  
Serial No.: 55850162

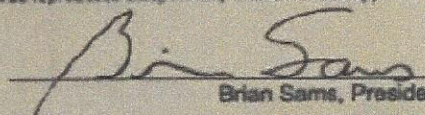
Location: Marlborough  
System Desc.: N/A

System ID: N/A  
P&ID Tag: N/A

Type of Cal.: Normal  
As Found: In Tolerance  
As Left: Left as Found  
Technician: Brian Sams  
Procedure: Calibration Information: September 2006 and Supplement 2007  
Comments: Instrument Specific: N/A  
Calibration Specific: N/A

Cal. Date: 06Oct22  
Cal. Interval: 12 Month (End of Month)  
Date Due: 31Oct23  
Temp. / Humidity: 19 °C / 62 %

For purposes of determining pass/fail criteria, indicated deviations shall be rounded to the same resolution as the UUT's specified accuracy per the rounding method of ASTM Practice E29. The measurement results contained in this certificate were obtained using standards with uncertainties traceable through an unbroken chain of comparisons to the National Institute of Technologies (NIST), or through another National Metrology Institute (NMI) to the SI (International System of Units) via reference to national measurement standards, established natural constants, or consensus standards. A TAR (Test Accuracy Ratio) of 4:1 is maintained unless otherwise stated. CCL's quality system satisfies applicable requirements of ISO/IEC 17025 and ISO9001. Results contained in this certificate relate only to the item calibrated. This certificate shall not be reproduced except in full, without written approval from CCL.

  
Brian Sams, President

## Calibration Data

77 Series IV (Fluke)

| Standard                          | UUT As-Found | UUT As-Found Deviation | UUT As-Left   | UUT As-Left Deviation |
|-----------------------------------|--------------|------------------------|---------------|-----------------------|
| <b>**Resistance Calibration**</b> |              |                        |               |                       |
| 500.00 ohm                        | 500.1        | 0.1                    | Left As Found |                       |
| 50.000 kohm                       | 50.00        | 0.                     | Left As Found |                       |
| 5.0000 Mohm                       | 4.998        | -0.002                 | Left As Found |                       |
| 10.000 Mohm                       | 9.99         | -0.01                  | Left As Found |                       |
| 40.000 Mohm                       | 39.92        | -0.08                  | Left As Found |                       |
| <b>**Continuity Calibration**</b> |              |                        |               |                       |
| Beeper On @ 25 ohm                | On           |                        | Left As Found |                       |
| Beeper Off @ 250 ohm              | Off          |                        | Left As Found |                       |
| <b>**AC Voltage Calibration**</b> |              |                        |               |                       |
| 0.0500 V @ 45 Hz                  | 0.050        | 0.                     | Left As Found |                       |
| 5.0000 V @ 45 Hz                  | 4.994        | -0.006                 | Left As Found |                       |
| 5.0000 V @ 1 kHz                  | 4.945        | -0.055                 | Left As Found |                       |
| 50.000 V @ 45 Hz                  | 49.94        | -0.06                  | Left As Found |                       |
| 50.000 V @ 1 kHz                  | 49.97        | -0.03                  | Left As Found |                       |
| 500.00 V @ 45 Hz                  | 499.4        | -0.6                   | Left As Found |                       |
| 500.00 V @ 1 kHz                  | 499.7        | -0.3                   | Left As Found |                       |
| 1000.0 V @ 45 Hz                  | 999          | -1.                    | Left As Found |                       |
| 1000.0 V @ 1 kHz                  | 1000         | 0.                     | Left As Found |                       |

# Certificate of Calibration

Certificate: CC200692

On-site Calibration: No

|                                      |        |        |               |  |
|--------------------------------------|--------|--------|---------------|--|
| <b>**Frequency Calibration**</b>     |        |        |               |  |
| 50.000 kHz @ 5 V                     | 50.00  | 0.     | Left As Found |  |
| <b>**DC Voltage Calibration**</b>    |        |        |               |  |
| 5.0000 V                             | 5.000  | 0.     | Left As Found |  |
| 300.00 V                             | 300.0  | 0.     | Left As Found |  |
| 1000.0 V                             | 1000   | 0.     | Left As Found |  |
| -1000.0 V                            | -1000  | 0.     | Left As Found |  |
| <b>**DC Millivolts Calibration**</b> |        |        |               |  |
| 30.00 mV                             | 30.0   | 0.     | Left As Found |  |
| -300.00 mV                           | -299.9 | 0.1    | Left As Found |  |
| 600.00 mV                            | 599.8  | -0.2   | Left As Found |  |
| <b>**Capacitance Calibration**</b>   |        |        |               |  |
| 900.0 nF                             | 900    | 0.     | Left As Found |  |
| <b>**Diode Calibration**</b>         |        |        |               |  |
| 2.0000 V                             | 1.999  | -0.001 | Left As Found |  |
| <b>**AC Milliamp Calibration**</b>   |        |        |               |  |
| 0.500 mA @ 45 Hz                     | 0.51   | 0.01   | Left As Found |  |
| 50.000 mA @ 1 kHz                    | 49.89  | -0.11  | Left As Found |  |
| 400.00 mA @ 1 kHz                    | 398.7  | -1.3   | Left As Found |  |
| <b>**AC Amps Calibration**</b>       |        |        |               |  |
| 4.0000 A @ 45 Hz                     | 3.996  | -0.004 | Left As Found |  |
| 9.000 A @ 1 kHz                      | 8.98   | -0.02  | Left As Found |  |
| <b>**DC Milliamp Calibration**</b>   |        |        |               |  |
| 3.000 mA                             | 3.00   | 0.     | Left As Found |  |
| 50.000 mA                            | 49.98  | -0.02  | Left As Found |  |
| -400.00 mA                           | -400.0 | 0.     | Left As Found |  |
| <b>**DC Amps Calibration**</b>       |        |        |               |  |
| 4.0000 A                             | 4.000  | 0.     | Left As Found |  |
| -9.000 A                             | -9.00  | 0.     | Left As Found |  |

UUT = UHM Under Test

## Calibration Standards

| Standard ID | Description                 | Due Date |
|-------------|-----------------------------|----------|
| SD0834      | Meter, Humidity/Temperature | 30Jun23  |
| SD0930      | Calibrator, Multi-Product   | 31Aug23  |

End of Data

# SERVICE INVOICE

## Capone Communications

56 Blackstone Street  
Mendon, MA 01756  
Phone (508) 528-2239

Please include your PO number on all related correspondence

### P.O. NUMBER

#### To:

Dover Police Department  
3 Walpole Street  
Dover, MA 02030

#### Remit Payment To:

Capone Communications  
56 Blackstone St.  
Mendon, MA 01756

| INVOICE DATE | INVOICE NO. | SHIPPED VIA | FOB POINT | TERMS |
|--------------|-------------|-------------|-----------|-------|
| 8/15/2023    |             |             |           |       |

| ITEM | QTY   | DESCRIPTION                                                                                                                                                                                                      | UNIT PRICE  | TOTAL        |
|------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------|
|      |       | Repair existing AB-1309 at Snow Hill in Dover, MA with used parts to be purchased from vendor in Alabama. Used parts will be transferred into existing damaged AB-1309 to retract the tower and lower main boom. |             |              |
|      |       | Travel to and from location to inspect used equipment - 2 employees                                                                                                                                              |             |              |
|      | 2.00  | Airfare (estimated)                                                                                                                                                                                              | \$ 700.00   | \$ 1,400.00  |
|      | 2.00  | Rental car (estimated per day)                                                                                                                                                                                   | \$ 50.00    | \$ 100.00    |
|      | 8.00  | Meals (estimated)                                                                                                                                                                                                | \$ 30.00    | \$ 240.00    |
|      | 2.00  | Hotel                                                                                                                                                                                                            | \$ 250.00   | \$ 500.00    |
|      | 60.00 | Staff time                                                                                                                                                                                                       | \$ 120.00   | \$ 7,200.00  |
|      |       |                                                                                                                                                                                                                  |             | \$ -         |
|      | 1.00  | Price for equipment as verbally quoted by dealer                                                                                                                                                                 | \$ 7,800.00 | \$ 7,800.00  |
|      |       |                                                                                                                                                                                                                  |             | \$ -         |
|      |       | Transportation of used equipment from vendor location to Dover, MA                                                                                                                                               |             | \$ -         |
|      | 84.00 | Travel time (2 employees, 4 days of travel)                                                                                                                                                                      | \$ 120.00   | \$ 10,080.00 |
|      | 1.00  | Fuel and tolls                                                                                                                                                                                                   | \$ 1,400.00 | \$ 1,400.00  |
|      | 12.00 | Hotel                                                                                                                                                                                                            | \$ 250.00   | \$ 3,000.00  |
|      | 36.00 | Meals (estimated)                                                                                                                                                                                                | \$ 30.00    | \$ 1,080.00  |
|      |       |                                                                                                                                                                                                                  |             | \$ -         |
|      | 20.00 | Prepare and load equipment required to safely load and transport AB-1309 on semi-trailer                                                                                                                         | \$ 120.00   | \$ 2,400.00  |
|      | 1.00  | Crane loading at site with spreaders                                                                                                                                                                             | \$ 2,000.00 | \$ 2,000.00  |
|      | 32.00 | Staff time to assist with crane prep and loading                                                                                                                                                                 | \$ 120.00   | \$ 3,840.00  |
|      | 1.00  | Trucking of AB-1309 (estimated, including wait time)                                                                                                                                                             | \$ 9,000.00 | \$ 9,000.00  |
|      | 1.00  | Crane unloading at MA site with spreaders                                                                                                                                                                        | \$ 2,000.00 | \$ 2,000.00  |
|      | 8.00  | Staff time to assist with crane prep and unloading                                                                                                                                                               | \$ 120.00   | \$ 960.00    |
|      | 24.00 | Remove old controller and replace with newly purchased controller                                                                                                                                                | \$ 120.00   | \$ 2,880.00  |
|      | 64.00 | Remove and replace motors on 3 azimuths                                                                                                                                                                          | \$ 120.00   | \$ 7,680.00  |
|      | 40.00 | Remove upper motor for lowering and raising upper portion of tower                                                                                                                                               | \$ 120.00   | \$ 4,800.00  |
|      | 32.00 | Remove lower motor for lowering and raising lower portion of tower                                                                                                                                               | \$ 120.00   | \$ 3,840.00  |
|      | 80.00 | Replace all control cabling from control box to motors                                                                                                                                                           | \$ 120.00   | \$ 9,600.00  |
|      | 48.00 | Replace all safety microswitches control cables                                                                                                                                                                  | \$ 120.00   | \$ 5,760.00  |

SUBTOTAL \$ 87,560.00

SALES TAX \$ -

SHIPPING & HANDLING

OTHER

TOTAL \$ 87,560.00

Please Contact David Capone for any questions @ (508) 528-2239

**Thank You For Your Business! Note:** all balances over 30 days past due will be assessed finance charges of 1.5% per month (18% Annually). Any fees arising from a delinquent account Legal, Court, Collections, etc.) will be the responsibility of the customer