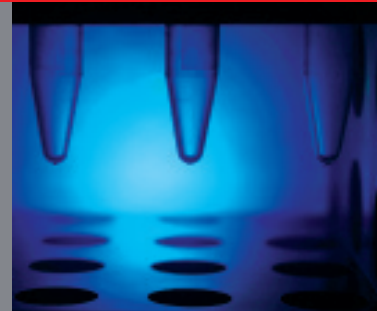


Customized Calibration Solutions



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Optimal Service Management

- Innovative Programs
- Total Cost of Ownership
- Regulatory Compliance
- Assurance of Supply
- Account Management
- Customer Logical



Introduction

With over 160 years in the metrology field and focusing solely on the science of measurement, Troemner is committed to delivering a customized calibration service solution to you. Troemner's Optimal Service Management Program will help you to maximize the performance of your service processes.

Elements of the program include:

1. Service Analysis

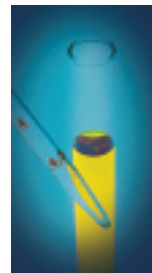
Troemner is focused on building a relationship with you. This is where a service management plan is designed to meet your requirements and expectations.

Account Management

- **Relationship Management** – we will develop relationships with key individuals/departments within the organization that are a part of the service process - Senior Management, QA, QC, Metrology, Purchasing, Accounting, and End-Users. This allows us to effectively understand 1) past performance compared to objectives, 2) risks and opportunities, and 3) future developments, new objectives, forecasts and issues.
- **Service Level Management** – we will define, monitor and control our service quality based on Consistency, Confidence and Customization. We address every variable of our measurement process to assure consistency of calibration results, which leads to accurate results in your processes, products and services. We assure our consistency through independent verification. We can tailor a calibration or certificate to meet your specific needs.

Plan Development

- **Service Design** – based on our conversations with key individuals/departments, we will design a customized service management process that mirrors the agreed upon performance standards.
- **Build and Test Service** – we will build, test and implement the service process that addresses each need to ensure that the mutually agreed to service plan design meets the requirements and expectations of both parties.



Optimal Service Management

2. Service Planning and Implementation

This area is focused on the key elements of preparation for launching an ongoing management of services, whether it is designed for internal or external “customers”. Taking the time in advance to plan strategies for how to handle on-going operations helps optimize the service process as well as your total cost of ownership.



Troemner will work as a part of your team to help identify the appropriate strategies that are right for you. We will also help design a plan to eliminate the disconnect between Senior Management, QA, QC, Purchasing, Accounting, and End Users.

Assurance of Supply

- **Capacity Management** – we will ensure that the resources necessary to meet your requirements are provided. This includes meeting requirements such as: transaction volume and turnaround time.
- **Service Continuity** – we will safeguard the performance of our services as defined by our total quality management system that complies with ISO 9001 and ISO/IEC 17025. This is reviewed daily through internal and external audits and management reviews.

Total Cost of Ownership

- **Cost Awareness** – we will help in identifying, calculating, monitoring and allocating costs for the provided services. This provides the basis of budget planning.
- **Logistics, Warehousing, & Distribution Strategies** – we will effectively manage all activities involved in obtaining and managing raw materials, component parts, finished products, packaging and distribution, ensuring that each is available, in the most cost-effective manner, at the right place, at the right time.
- **Outsourcing Strategies** – we will ensure you are focusing on your core competencies. Where significant resources are expended on activities that do not represent core competencies, consider if it makes sense to outsource these particular areas to Troemner.
- **Asset Management** – we will effectively collect, monitor and maintain all devices owned by the organization. This data is used in connection with the financial aspects of ownership such as consistent preventive maintenance, elimination of on-hand inventory, proper care and technique training, assurance of minimal downtime, and vendor consolidation.

Systems Planning

- **Systems Architecture** – we will develop a customized business software system that takes into consideration the needs of Senior Management, QA, QC, Metrology, Purchasing, Accounting, and End-Users.
- **Security Management** – we will define and maintain a security policy that ensures 1) confidentiality is appropriately preserved, 2) information maintains a high level of integrity, 3) information is available when needed, 4) transactions are not denied, and 5) contractual agreements can be fulfilled.
- **Service Implementation** – this is where the service management plan is put into action.

3. Service Support

This area focuses on supporting the service process once it is deployed. It includes everything from customer service and technical support, to field service and logistics.



Operational Processes

- **Service Center** – this is the central point of contact between you and us with regards to matters concerning the services provided. This includes coordination of technical management, problem management, change management and field service management.
- **Technical Management** – this is the process to respond to your technical requests as quickly as possible while minimizing negative effects on your business process. We have six trained metrologists on staff. Their sole purpose is to track and control our measurement process to assure superior quality and compliance.
- **Problem Management** – our objective is to prevent and reduce incidents as well as to provide quick and effective problem solving to ensure a structured use of resources. Includes all aspects of service failures including identification and resolution of root-cause issue.
- **Change Management** – this is the process of prioritizing initiatives and resources, assign accountability and monitoring the impact of these initiatives to improve the service management plan.
- **Field Service Management** – to effectively manage geographically dispersed employees to perform all activities necessary to maintain a high quality service process.

Troemner Calibration Services

For over 160 years, Troemner has set the standard for precision weights and weight calibration through its commitment to achieving the highest measurement capability and offering the lowest measurement uncertainties possible. Today Troemner leverages its expertise and commitment to offer Calibration Services that meet all of your measurement and compliance needs.



You can count on Troemner for:

Consistency – We address every variable of our measurement process to assure consistency of calibration results, which leads to accurate results in your processes, products and services.

- **Strict Environmental Controls** – Troemner maintains one of the largest and most advanced state-of-the-art independent metrology laboratories in the world with excellent controls to keep the environment stable.
- **Finest Equipment** – For each measurement discipline, Troemner possesses the finest calibration equipment available.



- **Highly Skilled Metrologists and Technicians** – Troemner has a highly trained staff of metrologists and technicians capable of making precise measurements and monitoring calibration processes.
- **Measurement System** – Troemner's measurement system is rigorously reviewed. Our multiple primary standards are directly traceable to NIST.



Confidence – Troemner assures its consistency through independent verification.

- **Proprietary Calibration Software** – Our software verifies the accuracy of each measurement, reduces errors and identifies measurements that fall outside acceptable limits to eliminate the possibility of a suspect calibration leaving the building.
- **Documented Procedures** – Troemner's Quality System ensures there are controlled training documents and work instructions. Daily internal audits along with a customized electronic customer feedback program allow Troemner to immediately identify any abnormalities in its quality system.
- **Registration and Accreditation** – Troemner's Calibration System is ISO 9001 registered and conforms to ISO/IEC 17025 and ANSI/NCSL Z540-1 standards. Troemner is NVLAP* accredited for many of its measurement disciplines including mass, temperature, pipettes, humidity and pressure.

Customized – Troemner can tailor a calibration or certificate to meet your specific needs.

- **We offer several levels of service and certificates for each calibration.**
- **We can add needed information to your certificates and compliance documentation.**
- **Adjustment, repair and calibration all from one source** – Troemner is a full service laboratory and can make adjustments and repairs for many types of calibration devices upon your request.

Calibration Services



Temperature Calibrations from -196° C to 660° C are NVLAP* accredited. While we have the capability to perform calibrations up to 1100° C, these are not NVLAP* accredited but ISO/IEC 17025 compliant.

Pressure Calibrations from 0 to 1000 psi with accuracy as low as 0.005% of reading – Types of instruments serviced by Troemner include gauges, transducers, calibrators, monitors and dead weight testers. Four standard levels of service, as well as custom services are available. NVLAP* accredited calibrations.

Humidity Calibrations from 10% to 95% – NVLAP* accredited calibrations on a wide variety of humidity measurement devices including chart recorders, data loggers, hygrometers, hygrothermographs, sensors, humidity generators, and dewpoint hygrometers.

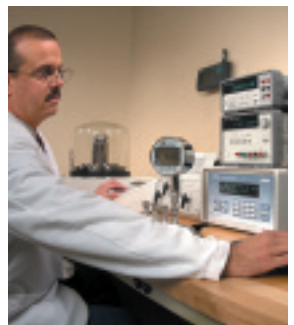
Pipette Calibrations from 0.1 µl to 5 ml are NVLAP* accredited with capabilities up to 100 ml.

Dimensional Calibrations from 0.1" – 18" – with accuracy ± 50 micro inches for calipers, micrometers and depth gauges and ± 1/1000 micro inches for rulers. A traceable certificate is provided with each calibration.



*Precision & Balance
Matched Only By Nature.*

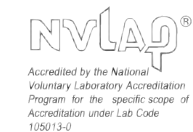
Thermal Mass Flow Calibrations from 2 sccm to 100 slpm – Troemner can repair, resize, calibrate, and provide ISO/IEC 17025 compliant certificates for thermal mass flow meters and controllers from virtually any manufacturer. Variable volume meters (rotameters) can also be calibrated and serviced.



Mass Calibrations from 0.050 mg to 2000 kg (0.00001 oz to 5000 lb) – Services include NVLAP* and UKAS** Certificates of Calibration, NVLAP* Density Determination Calibrations and NVLAP* Magnetic Susceptibility Determination Calibrations.



Electrical, Time and Frequency Calibrations – Electrical calibrations are ISO/IEC 17025 compliant and include DC Voltage, DC Current, AC Voltage, AC Current, DC Resistance, Capacitance and AC/DC Power. Time and Frequency ISO/IEC 17025 compliant calibrations are available for timers, stopwatches, frequency/timer counters and synthesizers.



*NVLAP Lab Code 105013-0



**A UKAS Accredited Calibration Laboratory No. 0516

0516



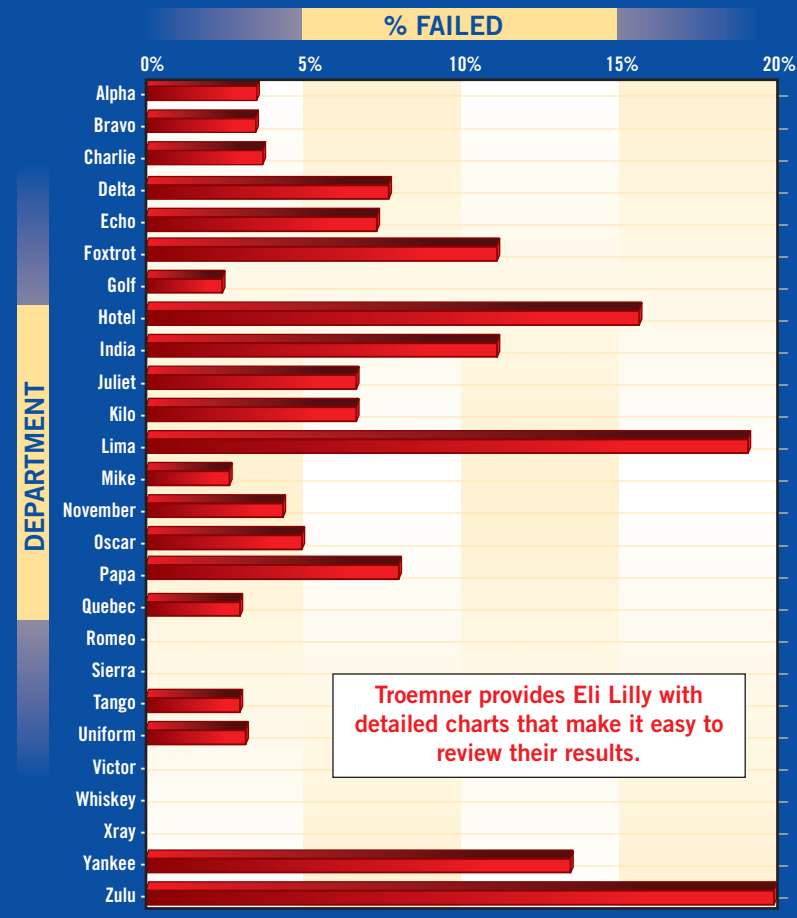
Case history

Client: Eli Lilly

Need: Organize Asset Management Process for Pipette Calibration



As Found Failures by Department



Eli Lilly's requirements of a new pipette calibration service provider included:

1. Provide Quality Calibrations
2. Provide a Secure Traceability Chain
3. Provide Immediate Service Support
4. Provide the Highest Achievable Level of Accreditations (NVLAP*, ISO 9000, ISO 9002, ISO/IEC 17025)
5. Provide Unparalleled Environmental Conditions and Physical Facilities
6. Provide a Sound Understanding of all Theoretical and Practical Aspects of Measurement
7. Provide Detailed Interval and Content Reports
8. Provide Customized Calibration Procedures and Programs
9. Provide Minimal Downtime
10. Provide the Capability to Calibrate and Repair all Pipette Manufacturers
11. Ensure Data Integrity
12. Provide a Rotation Program

Eli Lilly and Troemner worked with key departments within both organizations to develop a customized program that addressed each of Eli Lilly's requirements. In August 2005, Eli Lilly officially named Troemner as their full service calibration service provider for managing their entire pipette calibration process.



Comprehensive Calibration Services

How has Eli Lilly benefited from this partnership?

Traceability, Turnaround, Support

They have **more confidence** in the instruments that they are using on a daily basis. They **no longer question** if the calibration is accurate. This is **verified by the NVLAP* certificate** that accompanies each calibrated pipette.

Troemner **monitors and tracks the changes** in all pipette manufacturers' tolerance specifications for each pipette or repeater. When a calibration is performed, the most up-to-date tolerances available from the manufacturer are used. **This assures Eli Lilly of a secure traceability chain.**

Should technical questions or issues arise, **Eli Lilly now has access to six metrologists** that have a sound understanding of all theoretical and practical aspects of measurement.

Troemner guarantees a 72 hour turnaround (not including shipping) which provides Eli Lilly minimal downtime.

Troemner employs an **onsite facilitator** as a liaison between Eli Lilly and Troemner employees. The onsite facilitator's responsibilities include, but are not limited to, managing the outgoing pipettes and distributing incoming pipettes, providing copies of misplaced documentation and facilitating the coordination of emergency calibrations.



Utilizing Troemner's expertise for sourcing parts and repairing pipettes for all pipette manufacturers, Eli Lilly **no longer needs to inventory or manage the sourcing of parts** for the various pipettes their employees use on a daily basis.

To ensure data integrity, each pipette has its own serial number which is identified by a barcode. When a barcode is scanned the entire history of the pipette is available through the customer's customized software program.



Troemner has successfully implemented a rotation program for Eli Lilly which provides minimal downtime. The user simply exchanges a device which is due for calibration for an identical model that has been recently calibrated and is stored with the onsite facilitator.

Peace of Mind

Eli Lilly has peace of mind that their calibrations are now being performed in a **controlled environment**. Troemner's state-of-the-art Pipette Calibration Laboratory meets or exceeds the requirements listed in internationally recognized standards. This laboratory was carefully designed and constructed to reduce the effects of vibrations and to strictly control and monitor the environment. Troemner samples the environment at approximately 1-minute intervals. **Balances used in the calibration of pipettes are tested daily for reproducibility at a set weight.** The weights used for the verification of the balances are calibrated yearly or as required.

Troemner provides Eli Lilly quarterly and annual reviews to keep everyone informed. The report includes trend, data and asset management analysis. The pipette calibration summary includes:

- Total devices calibrated vs. As Found failures
- Total devices calibrated vs. As Found failures sorted by manufacturer
- Total devices calibrated vs. As Found failures sorted by department
- Total devices calibrated vs. As Found failures sorted by department then broken down by manufacturer
- Total devices calibrated vs. As Found failures sorted by site location
- Total devices calibrated vs. As Found failures sorted by site location then broken down by manufacturer

*Data is presented in both tabular and graphical formats. These reports are useful in identifying process improvement opportunities.

Another problem solved

Are you seeking a reliable, dedicated calibration services provider who can meet your strict service, quality, cost and value requirements?

Troemner can provide you with customized calibration solutions through the Optimal Service Management Program. Call or email us to discuss your current calibration service processes.

Phone: 800-352-7804
Email: CustomizedCalibrations@troemner.com

