

e-Learning modules

New Zealand case study



Introduction

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Trading Standards

- Accreditation of private sector companies to Verify and Inspect weighing and measuring equipment
- Conduct programmed surveillance on accredited persons to assess compliance levels

Intended audience

- Accredited Persons:
 - Verifying and Inspecting NAWI
- Trading Standards Officers:
 - Legal metrology officials?
 - Authorised or compliance officers?

How do they work

- Provide an explanation and demonstrate procedures for testing a NAWI:
 - Step by step written test procedure
 - Animation that shows the procedure being performed
 - Quick quiz
 - Assessment
 - Open reference resource



Sample animation

How the digital division works



Intended use

- One source of technical information for all parties
- Training tool for Accredited Persons and Trading Standards Officers
- Screening tool to assess user competence
- learning resource for Accredited persons



Currently cover

- E-Learning modules for Class III and Class IIII NAWI ≤ 300 kg
- Test requirements for Accredited Persons (companies etc. in NZ) to test NAWI in the above classes
- Mandatory base knowledge required to become accredited for testing NAWI ≤ 300 kg
- Additional modules (mandatory):
 - Requirements to comply with Type Approval Certificates
 - Legal rights and responsibilities of Accredited Persons operating under NZ legislation



Trading Standards use

- For training
- Setting the skill bench mark
- Assessment of competency:
 - pre-accreditation of applicants
 - before conducting a compliance audit
- Educational resource for users

Sample written test procedure

Accuracy of the Zero setting device

- 1 Exercise the instrument (if this is the first test being performed).
- 2 Zero the instrument by pushing the **zero-setting** button.
- 3 Place a load of at least the minimum capacity but $\leq 4\%$ of maximum capacity on the instrument.
- 4 Apply delta loads of $1/10^{\text{th}}$ e until the indication changes up.
- 5 Remove the last delta load.
 - > Steps 3-5 take the instrument to the changeover point.
- 6 Push the **zero-setting** button.
 - > This will set the zero to $\pm 0.25e$ of the centre of zero.
- 7 When the indication has stabilised and the zero annunciator is illuminated, add a load equal to $10.25e$.
 - > The indication should read $10e$.
 - > If it indicates $11e$ then the instrument fails.
- 8 Add an additional load of $0.5e$ to the load receptor, making the total load $10.75e$.
 - > If the indication reads $11e$, the instrument passes the zero test.
 - > If it indicates $10e$ it fails.



Sample test animation

Accuracy of the Zero setting device



Sample Quiz question

Accuracy of the Zero setting device

A 30 kg scale where $e = 10$ g is being tested.

1. What is the first step that you should take?

- Push the **zero-setting** button.
- Exercise the instrument.
- Put your first set of weights onto the instrument.

Submit

Show feedback



Sample Quiz question response

Accuracy of the Zero setting device

Do you think you've got it?

A 30 kg scale where $e = 10$ g is being tested.

1. What is the first step that you should take?

Push the zero-setting button.



Exercise the instrument.

Put your first set of weights onto the instrument.

Submit




Show feedback



Sample assessment question

Accuracy of the Zero setting device



Assessment – Zero-setting device accuracy test

A 300 kg scale where $e = 100$ g is being tested on verification. You have to complete the zero-setting device accuracy test on this instrument.

1. Which loads should be used to test this instrument?

- 25e, 30e.
- 25.25e, 25.75e.
- 10e, 11e.
- 10.25e, 10.75e.

Submit Show feedback



Administration Rights

- Restricted access
- Provides data on:
 - Who is registered
 - Number of attempts – quiz and assessment
 - What pages are viewed
 - Etc.



Introduced

- All Accredited Persons in NZ
- 6 month implementation period:
 - To update their Quality Management Systems
 - To amend their procedures
- Each individual issued a registration login:
 - Their email and a password
- Unrestricted access when registered
- Mandatory that each individual complete the whole module



Initial feedback

- Accredited Persons were enthusiastic, it provided:
 - Clarity that standard procedures bring consistency
 - Reinforces a “level playing field”
 - A training resource and documented procedures
 - Complicated concepts or procedures are easier to comprehend with animations
- Trading Standards Officers also like them:
 - As a standardised reference to audit against
 - As an educational resource

Lessons Learnt

- Methodical approach is needed
- Vendor selection is important
 - Costs and service level can vary greatly
- Platform selection needs to be “editor friendly”
- Use of universally acceptable
 - Images, Animations, Language
- Produced Guide 8 Document (APLMF), “How to develop an eLearning Module”

What's Next

- The development of sub-modules to extend categories to include:
 1. Class II weighing Instruments
 2. High Capacity NAWI
 3. Substitution load test procedures
- Draft APLMF module created compliant with OIML R 76 (Verification procedures)



How to develop an eLearning Module

Guide 8



How does it work

- The guide document is made up of the following:
 - A document control system
 - A timeline linked process flow
 - A system of templates
 - An appendix with worked examples



Document Control

- All documents are registered in the document control matrix
- Documents are created under a naming convention:
 - Number
 - Title
 - Description
 - Owner

Timeline

- The timeline in the document shows:
 - The process to be followed
 - An approximation of time taken for each task
 - The documents to be used

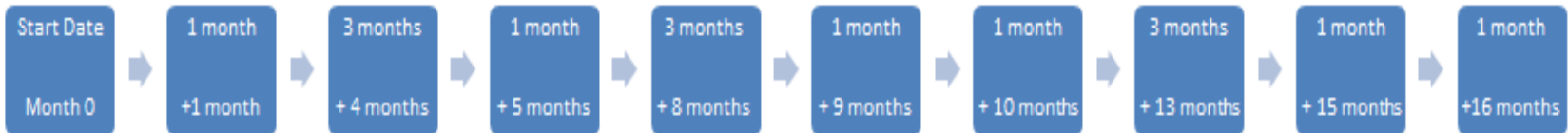


Timeline

Process



Time



Documents Required



Templates

- A system of templates, with guidance notes, has been created.
- The templates are in two groups:
 - GD series = Guidance documents
 - TP series = Test procedures
- Templates are sequentially numbered as they are created
 - Example :GD1-01, GD1-02, or TP1-01, TP1-02, TP1-03 etc.

Templates

- Template codes
- GD series:
 - GD1 - Governance Document
 - GD2 - Expert review request
 - GD3 - Quality control and sign off



Templates

- Template codes
- TP series:
 - TP1 - Test procedures
 - TP2 - Animations
 - TP3 - Quiz
 - TP4 - Assessments
 - TP5 - Diagrams



APLMF Suggested Topics

- 2019
 - NAWI - completed
- 2020
 - Average Quantity Systems (AQS)
 - Rice Moisture Metes
 - Spring balances
 - Weighbridges
 - OIML CS

APLMF Suggested Topics

- 2021
 - Fuel Dispensers
 - Taxi Meters
 - Water Meters
- 2022
 - Bulk Fuel
 - CNG

Resource Estimate

- External Vendor:
 - Visual Design
 - Development
 - Animations
 - Testing
- NZ\$ 26,000
- US\$ 16,800



Resource Estimate

- Coordination of the project:
 - APLMF Secretariat and MBIE NZ
 - Staff and time
 - APLMF Working Group
 - Members time and effort
- Contribution in kind



Appendix

- An example of a completed template for all the GD and TP series templates
- A completed Document Control Matrix
- A main document overview is provide
- Log in details to the New Zealand NAWI eLearning modules

URL: <https://learning.tradingstandards.govt.nz>
Username: tradingstandards@mbie.govt.nz
Password: Trading01



Acknowledgements

Acknowledgements to:

OIML

APLMF

NMI

[APLMF Guide 8 Draft](#)



Thank You For Your Attention

Any Questions

