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 benchmark
• 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 ≤4% of maximum capacity on the instrument.
4. Apply delta loads of 1/10th 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 ±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 \( e = 10 \text{ g} \) 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

A 30 kg scale where \( e = 10 \text{ g} \) is being tested.

1. What is the first step that you should take?
   - Push the 
     \textit{zero-setting} \ button.
   - Exercise the instrument.
   - Put your first set of weights onto the instrument.
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
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 provided
- Log in details to the New Zealand NAWI eLearning modules

URL: [https://learning.tradingstandards.govt.nz](https://learning.tradingstandards.govt.nz)
Username: tradingstandards@mbie.govt.nz
Password: Trading01
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APLMF Guide 8 Draft
Thank You For Your Attention

Any Questions