



Office for Product
Safety & Standards

National Project 2018-2019

Non-Automatic Weighing Instruments in Supermarkets

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Executive summary

Local Weights and Measures Authorities (LWMA) are responsible for enforcement of weights and measures legislation and the Office for Product Safety and Standards (OPSS) provides support as the national regulator. In 2018-19, OPSS coordinated a local authority led project to check the conformity of non-automatic weighing instruments (NAWI) in supermarkets, in partnership with the Legal Metrology Expert Panel. 77 LWMA participated, visiting a total of 590 premises of major supermarkets. Officers tested a total of 9,101 weighing instruments and found 0.5% (47 instruments) were inaccurate to the detriment of the consumer. A further 645 instruments were inaccurate to the detriment of the business. Other maintenance and calibration issues were also found, and trading standards officers acted to require businesses to correct issues with 1520 weighing instruments. Trading Standards officers worked closely with the supermarkets' Primary Authorities to share results and the supermarkets have taken action in response to these findings, including improving staff training and updating arrangements for instrument maintenance and verification.

Non-automatic weighing instruments in supermarkets

The aims of the project

To co-ordinate a project that targeted areas of concern regarding non-automatic weighing instruments (NAWIs) following the results of inspections by a number of LWMA's.

The project focussed on NAWIs in supermarkets, both large branches of national supermarkets and small convenience branches of national supermarkets. The aim was to check compliance of the instruments in terms of accuracy, sealing and conformity markings, and to note standards of installation and service where appropriate. NAWIs were freestanding, for staff or customer use, or were connected to scanners and tills as part of an electronic point of sale (EPOS) system.

The project was chosen by the Office for Product Safety and Standards with the agreement of the local government Legal Metrology Expert Panel.

Objectives

- Identify the levels of compliance with legal requirements of NAWIs in supermarkets
- Ensure instruments were properly installed
- Ensure there was proper and effective maintenance
- Establish if there was a need for appropriate training for supermarket staff
- Maintain competence for weights and measures inspectors – Trading Standards Officers (TSOs) – and provide practical experience for TSO trainees
- Provide feedback on compliance to supermarket primary authorities

Background

The Weights and Measures Act 1985 requires that NAWIs used by a trader, upon which a weight and subsequently a price is determined, must be: of a prescribed form; manufactured to ensure confidence in weighing; bear specified markings and be verified as accurate and compliant when put into service. Verification is identified by the placing of markers on the NAWIs, which identify the year of verification and the verifying authority (which may be a local authority acting as a 'Notified Body', or an Approved Verifier). A NAWI is subject to ongoing inspection by the LWMA; should it be found to be inaccurate in use, it is liable for rejection, and a mark bearing a six-pointed star is affixed to the equipment. The NAWI must then be re-verified before further use is permitted.

The major supermarkets benefit from a Primary Authority partnership with a LWMA¹. There is a Primary Authority Supermarkets Group (PASG) which meets to discuss common issues, and they were informed of the project in advance. Most supermarkets have a service contract for metrological controls with third parties, many of whom operate as Approved Verifiers.

¹ The Primary Authority scheme allows businesses and trade associations to form a legally recognised partnership with one or more local authorities – the 'primary authority' – in order to receive tailored support in relation to one or more specific areas of law.

Processes are in place as part of the businesses' due diligence systems to ensure equipment remains accurate and legally compliant. Any mechanical or electronic aspect of the NAWI, which could allow alteration in the accuracy of weighing (calibration access points), must be secured and sealed in order that the Weights and Measures Inspector can determine no tampering has taken place.

In addition to malicious tampering, a NAWI may become inaccurate through use. This can be minimised by simple maintenance steps, including:

- Keeping the weighing plate clean and free from debris
- Ensuring nothing is stored upon the weighing plate when it is not in use for weighing
- For NAWIs embedded into surroundings, ensuring that there is sufficient space around the weighing plate so that the plate does not 'bind' and give inaccurate readings
- Removing the weighing plate and checking for debris underneath / cleaning any debris underneath, as part of cleaning schedules
- Carrying out simple weighing checks, such as placing a calibrated weight onto the NAWI as part of the programme of in-store checks
- Ensuring that staff have sufficient training in the correct use and maintenance of NAWIs to avoid any issues occurring or ensure that issues are escalated as relevant

Method

The National Project ran between April and December 2018. LWMAs participated in the project around programmed inspection work. As a guide, authorities were requested to inspect three supermarkets within their area, with all results being submitted to OPSS. Each instrument was tested across its usual working range – including a minimum load, 2 kg, 5 kg and eccentric loading. NAWIs were either freestanding, for staff or customer use, or were connected to scanners and tills as part of an electronic point of sale (EPOS) system.

Survey methodology and documentation are reproduced at Annex 1.

OPSS and members of the PASG asked participating authorities to spread out their visits throughout the time period so that any ensuing call-outs from supermarkets to their scale maintenance companies and Approved Verifiers were also spread out. It was hoped that the timing of inspections could be planned and spread within a region to allow for this. The PASG did not provide details of stores to be visited, nor when the visits should happen.

Results

A total of 77 LWMAs took part in the project across Great Britain.

590 premises were visited: 367 large supermarkets and 223 smaller convenience branches of supermarkets.

A total of 9,101 weighing instruments were tested.

Overall, 3,198 individual faults were identified. Similar issues were found across all types of supermarket, both large stores and small convenience branches.

7.6% (692) NAWIs were found to be outside inspection tolerance, of which 0.5% (47 instruments) were inaccurate to the detriment of the consumer and 645 instruments were inaccurate to the detriment of the business.

1.7% (157) NAWIs were not correctly zeroed.

5.1% (463) NAWIs were out of level.

3.3% (304) NAWIs were improperly installed.

6.8% (619) NAWIs did not carry the correct verification markings.

963 other non-compliances were found.

The detailed results are given in Annex 3.

Action taken

The areas of concern found during this project have been acted on to improve compliance in this sector of business.

TSOs acted to require businesses to correct issues with 1520 weighing instruments (17% of the total) where non-compliances were found for maintenance and calibration issues. The majority (88%) related to large supermarkets.

TSOs drew the issues raised by their project visits to the attention of the appropriate primary authority and conducted follow-up actions as appropriate. Primary Authority Officers were sent details of the activities that officers undertook and the results of testing once the visits had been carried out. The relevant Primary Authority Officer then forwarded any concerns to their supermarket partner and ensured the matter was addressed by the store and Head Office appropriately. The supermarkets have taken action in response to these findings, including improving staff training and updating arrangements for instrument maintenance and verification.

Where appropriate, technical issues relating to NAWIs were reported to OPSS' technical specialists.

Conclusion

The project has highlighted areas of specific concern, enabling them to be addressed and consequently improve compliance in this sector of business. Where these relate to installation, operation and maintenance of NAWIs, the primary need was for training of all involved parties, supported by effective enforcement. The project has also enhanced the knowledge and competence of participating TSOs.

The main areas of concern were:

- The level of knowledge of weighing equipment and associated procedures for calibration checks and routine maintenance by supermarket staff in store.
- Procedures used by weighing instrument service companies, Approved Verifiers / Manufacturers and scale engineers for installation, verification and maintenance.

Next steps

To maintain consumer confidence and fair and equitable trading, it is planned to:

1. Share the findings from this project with supermarkets and their primary authorities on weights and measures to consider any necessary changes to their processes for maintaining metrological integrity.
2. Encourage risk-based inspection by LWMA of NAWIs that are in service. LWMA should share the findings of these inspections with the primary authorities to support the primary authority role leading the regulation of the business.

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3. Liaise with relevant industry bodies, including Approved Verifiers, to discuss how the findings of the project could be used to help the businesses that they work with operate in a compliant manner.
4. Continue the current training programmes, promoted and funded by OPSS and provided by CTSI, to maintain officer competence.
5. Review the provision of NAWI technical and reference information to TSOs.
6. Work with the Legal Metrology Expert Panel on national sector-focussed projects, to provide a wide overview of the areas examined and evidence of matters that need to be addressed further.

The Office for Product Safety and Standards would like to thank all Local Authorities and Trading Standards Officers who contributed to the project.

Annex 1: Methodology

Activities for Local Weights and Measures Authorities

- Inspect non-automatic weighing instruments that were installed and used in supermarkets. As a minimum, visit 3 large and 3 small supermarkets and, in each, test as many NAWIs as is practicable.
- Determine the accuracy of such instruments when in use.
- Determine compliance in terms of installation and manner of use including, where appropriate, the competency of users.
- Ensure that such instruments had been properly conformity assessed and were marked accordingly.
- Identify appropriate maintenance and diligence processes that supported the proper use of accurate and compliant instruments.
- Record the results of tests and inspections using the test sheets provided (Annex 4).
- Create and submit an intelligence log where appropriate.
- Send a summary of the results of testing in each supermarket to the appropriate Primary Authority Officer as soon as possible after the inspection.
- Report, to the Office for Product Safety and Standards (OPSS), collated results and an overview, summary and comments on the findings of inspections using the forms provided (Annex 2).

Activities for the Office for Product Safety and Standards

- Collate and report on the submitted findings.
- Determine, together with the Legal Metrology Expert Panel, the focus of any future activities.

Actions

- Local Weights and Measures Authorities who were intending to take part in the project were asked to notify OPSS.
- A copy of the completed inspection test sheet for each supermarket was to be sent by LWMA to the appropriate Primary Authority Officer with the results of testing as soon as possible after the inspection.
- After completing their work as part of the project, LWMA were asked to complete summary forms (respectively for small convenience and large branches of national supermarkets).
- If there were issues that came to light in the process of conducting the project, the LWMA concerned was asked to liaise with the appropriate Primary Authority.

Timetable

- May to November 2018 – LWMAAs were to conduct inspections.
- 31st December 2018 – LWMAAs were to send collated results, on the Annex 1 and Annex 2 forms, to OPSS.
- A report on the project would be subsequently be published by the OPSS.

77 LWMAAs took part in the project, some joining in later in the planned inspection period and so results were accepted until all those participating had submitted their results.

Annex 2: Template test sheet form

Individual Test Sheet for NAWI Inspection Supermarkets Project 2018

Please complete the green boxes, and as much of the rest of the form as possible

Local Authority	
Name and size of business	
Did the premise have a service contract?	

EPOS Non-automatic Weighing Instruments

Tests to be conducted in 'as found' state. As a minimum, please check zero, minimum load, 2 kg, 5 kg and eccentric loading	Non-self service	Self service
Number of instruments tested		
Number of instruments improperly installed (e.g. plate binding, incorrect height in relation to surround).		
Number of instruments out of level		
Number of instruments not correctly zeroed		
Number of instruments outside inspection tolerance - excess/fast indication of true weight		
Number of instruments outside inspection tolerance - deficient/slow indication of true weight		
Number of instruments rejected		
Number of instruments given formal notice, but not rejected		
Number of instruments giving rise to a Report for Formal Enforcement Action		
Number of instruments not carrying the correct conformity markings		
Number of instruments not properly marked		
Number of instruments not in conformity with Approval Certification		
Number of instruments with calibration access not properly sealed		
Number of instruments with faulty displays		
Number of instruments with incorrect EPOS price look up		

Freestanding Non-automatic Weighing Instruments

Tests to be conducted in 'as found' state. As a minimum, please check zero, minimum load, 2 kg, 5 kg and eccentric loading	Non-self service	Self service
Number of instruments tested		
Number of instruments improperly installed (e.g. plate binding, incorrect height in relation to surround).		
Number of instruments out of level		
Number of instruments not correctly zeroed		
Number of instruments outside inspection tolerance - excess/fast indication of true weight		
Number of instruments outside inspection tolerance - deficient/slow indication of true weight		
Number of instruments rejected		
Number of instruments given formal notice, but not rejected		

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Number of instruments giving rise to a Report for Formal Enforcement Action		
Number of instruments not carrying the correct conformity markings		
Number of instruments not properly marked		
Number of instruments not in conformity with Approval Certification		
Number of instruments with calibration access not properly sealed		
Number of instruments with faulty displays		

If instruments were found to be outside inspection tolerances please, if possible, give an indication of the applied load when outside tolerance

Applied load when outside inspection tolerance	No. with fast error	No. with slow error
Zero		
Minimum load		
2 kg		
5 kg		
Higher load		
Eccentric load		

Overview, Summary and Comments

Annex 3: Tables of collated results

(In the following tables, excess/fast indications of weight would be to the disadvantage of consumers, while deficient/slow indications of weight would be in favour of the consumer.)

Table 1: Collated results for National Supermarkets - Large Branches only

Local Weights and Measures Authority	
Number of premises visited	367
Number of premises visited which had a service contract	299
Number of Intelligence logs created	182

Table 1a: EPOS Non-Automatic Weighing Instruments

Tests to be conducted in 'as found' state. As a minimum, please check zero, minimum load, 2 kg, 5 kg and eccentric loading	Non-self service	Self service
Number of instruments tested	4335	2498
Number of instruments improperly installed (e.g. plate binding, incorrect height in relation to surround).	182	23
Number of instruments out of level	227	33
Number of instruments not correctly zeroed	83	12
Number of instruments outside inspection tolerance - excess/fast indication of true weight	17	6
Number of instruments outside inspection tolerance - deficient/slow indication of true weight	172	322
Number of instruments rejected	133	142
Number of instruments given formal notice, but not rejected	523	477
Number of instruments giving rise to a Report for Formal Enforcement Action	16	22
Number of instruments not bearing the correct conformity markings	250	291
Number of instruments not properly marked	261	144
Number of instruments not in conformity with Approval certification	32	22
Number of instruments with calibration access not properly sealed	177	92
Number of instruments with faulty displays	73	16
Number of instruments with incorrect EPOS price look up	8	0

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Table 1b: Freestanding Non-Automatic Weighing Instruments

Tests to be conducted in 'as found' state. As a minimum, please check zero, minimum load, 2 kg, 5 kg and eccentric loading	Non-self service	Self service
Number of instruments tested	945	196
Number of instruments improperly installed (e.g. plate binding, incorrect height in relation to surround).	25	4
Number of instruments out of level	108	8
Number of instruments not correctly zeroed	15	9
Number of instruments outside inspection tolerance - excess/fast indication of true weight	5	1
Number of instruments outside inspection tolerance - deficient/slow indication of true weight	34	4
Number of instruments rejected	17	1
Number of instruments given formal notice, but not rejected	67	6
Number of instruments giving rise to a Report for Formal Enforcement Action	5	0
Number of instruments not bearing the correct conformity markings	31	3
Number of instruments not properly marked	21	4
Number of instruments not in conformity with Approval certification	4	11
Number of instruments with calibration access not properly sealed	18	2
Number of instruments with faulty displays	5	0

Table 1c: The applied load when outside tolerance, where instruments were found to be outside inspection tolerances

Applied load when outside inspection tolerance	No. with fast error	No. with slow error
Zero	3	9
Minimum load	6	14
2 kg	12	96
5 kg	11	143
Higher load	18	425
Eccentric load	17	146

Table 2: Collated Results for Small Convenience Branches of Large National Supermarkets

Local Weights and Measures Authority	
Number of premises visited	223
Number of premises visited which had a service contract	144
Number of Intelligence logs created	31

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Table 2a: EPOS Non-Automatic Weighing Instruments

Tests to be conducted in 'as found' state. As a minimum, please check zero, minimum load, 2 kg, 5 kg and eccentric loading	Non-self service	Self service
Number of instruments tested ¹	787	305
Number of instruments improperly installed (e.g. plate binding, incorrect height in relation to surround).	64	5
Number of instruments out of level	78	3
Number of instruments not correctly zeroed	38	0
Number of instruments outside inspection tolerance - excess/fast indication of true weight	15	2
Number of instruments outside inspection tolerance - deficient/slow indication of true weight	67	45
Number of instruments rejected	31	29
Number of instruments given formal notice, but not rejected	62	25
Number of instruments giving rise to a Report for Formal Enforcement Action	0	0
Number of instruments not carrying the correct conformity markings	31	12
Number of instruments not properly marked	22	2
Number of instruments not in conformity with Approval certification	1	0
Number of instruments with calibration access not properly sealed	21	7
Number of instruments with faulty displays	13	0
Number of instruments with incorrect EPOS price look up	1	2

¹ It was noted that some small convenience branches no longer stocked produce that required weighing before sale, and so the weighing instruments found in store were redundant.

Table 2b: Freestanding Non-Automatic Weighing Instruments

Tests to be conducted in 'as found' state. As a minimum, please check zero, minimum load, 2 kg, 5 kg and eccentric loading	Non-self service	Self service
Number of instruments tested	31	6
Number of instruments improperly installed (e.g. plate binding, incorrect height in relation to surround).	1	0
Number of instruments out of level	6	0
Number of instruments not zeroed	0	0
Number of instruments outside inspection tolerance - excess/fast indication of true weight	1	0
Number of instruments outside inspection tolerance - deficient/slow indication of true weight	1	0
Number of instruments rejected	3	0
Number of instruments given formal notice, but not rejected	3	1
Number of instruments giving rise to a Report for Formal Enforcement Action	0	0

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Number of instruments not carrying the correct conformity markings	1	0
Number of instruments not properly marked	3	1
Number of instruments not in conformity with Approval certification	0	0
Number of instruments with calibration access not properly sealed	0	0
Number of instruments with faulty displays	0	0

Table 2c: The applied load when outside tolerance, where instruments were found to be outside inspection tolerances

Applied load when outside inspection tolerance	No. with fast error	No. with slow error
Zero	11	0
Minimum load	1	1
2 kg	4	12
5 kg	5	21
Higher load	2	97
Eccentric load	6	20

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