DRAFT
Quality Audit of the Fishing Port of Portavogie

Confidential Report
No. CR185

Trevor Misson
April 2002

Sea Fish Industry Authority
Seafish Technology

Quality Audit of the Fishing Harbour at Portavogie

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T. Misson
M. Myers

Summary

This report presents the findings of a Quality Audit of the fishing port of Portavogie in Northern Ireland that examined the quality of raw material supplies to the port, standards of physical infrastructure, operating practices and management controls.

The harbour and it's environs are owned and operated by the Northern Ireland Fishery Harbour Authority (NIFHA) and services a fleet of around sixty vessels that land mostly whitefish and prawns with a value in 2000 of more than £6M (sterling).

The quality of fish and shellfish supplied to the market was high as were standards of boxing practice, although inadequate use of ice was noted, possibly caused by poor weather forcing reduced trip length on the boats and disinclination by skippers to use ice on fish from a two-day trip.

The fish market is of adequate size for the landings received and generally kept in good order by the Harbour Master and his staff. With some minor exceptions, the standard of hygiene was high and no serious problems were noted with the market or it's operation, although door protocol could be improved.

The services provided by NIFHA for the fleet includes two slipways, an ice plant, water, electricity and fuel. The improvements to the main quayside ice plant were progressing well at the time of the audit.

The standard of some vehicles used to deliver or despatch fish and shellfish is poor, relevant recommendations are made at the end of the report.

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1 Introduction

The increasing demands of the corporate food sector and the requirements of food safety legislation have given impetus to the need to raise quality and operating standards within the fish industry.

In the ports sector where responsibility for structures, equipment, services and the conduct of staff is vested in numerous and diverse organisations, the lack of unitary command and authority can give rise to problems of control, particularly over standards. It is essential in such an environment that standards affecting food safety are clearly defined and properly enforced, not only to meet statutory requirements but also to protect and promote the image of fish as a safe and wholesome food that is properly treated throughout the production chain.

Beyond the basic requirements of food safety, high standards of care are necessary when handling fish products of a perishable and delicate nature in order to achieve the quality of product required by the market, itself dominated by the increasingly rigorous demands of the multiples.

In response to the recommendations of the Industry Task Force and demand from various areas of the fishing industry, Seafish introduced an initiative targeted at raising standards in the ports sector, achieved primarily by means of Port Quality Audits. The audits examine and report on a number of key areas within the overall fishery services operation of the port, including the standards of physical infrastructure, operating practices and management controls. Relevant recommendations are made and action is then encouraged and supported at a local level as required.

The scope of the audit covers the operations from landings at the quayside or overlanded deliveries to the market, to the despatch of fish from the market after sale. It does not cover standards on fishing vessels nor within fish processing factories. This report is confidential to the trade, Local Authority and the Northern Ireland Fishery Harbour Authority (NIFHA) and is not for publication.

This report presents the findings of a port quality audit at Portavogie undertaken in August 2001. It was carried out with the full collaboration and participation of fishermen, sales agencies, POs, buyers, merchants, NIFHA, as well as operators and providers of ancillary services, all of whose help and expertise is gratefully acknowledged.

2 Survey Procedures

During the period 21st to 24th August 2001, a small team of fish technologists monitored the landing, handling, storage and sale of fish and shellfish on Portavogie fish market. During this period the landings were mixed but comprised mostly whitefish with some shellfish such as prawns, crabs and whelks. The vessels landing to the market had been forced to fish only two or three days due to poor weather, so fish quality was relatively high (fresh fish from short trips). Normally, weather permitting, trips of five days are often made from Portavogie, with necessarily some slightly lower quality fish landed – those that had been caught at the beginning of the trip.

During this audit, the fish and shellfish landed (or overlanded) to the market were examined for quality-affecting parameters such as the thoroughness of icing, gutting and washing, and a number of temperature checks were made on various species on the fish market.

Discussions were also held with crewmembers to establish trip length, vessel operating practices and fishermen's perceptions regarding the level of provision of local infrastructure, services and support.

Assessments of the standards of physical infrastructure, operating practices and management controls were undertaken using a structured approach of observations on-site and discussions with fishermen, Denholms (salesmen/agents), buyers and merchants, the Port Authority (NIFHA) and both the Producer Organisations.

3 Raw Material Supplies

3.1 Fleet size and volume of landings

During 2000, the volume of landings at Portavogie was 4,406 Tonnes, with a value of £6,124,503, compared with Ardglass: 4,154 T, worth £2,598,999 and Kilkeel: 5,599 T, worth £6,081,082. Fleet sizes for the year 2000 were Portavogie over 10m vessels: 48, under 10m: 18; Ardglass over 10m: 24, under 10m: 10; Kilkeel over 10m: 92, under 10m: 38. So although Portavogie did not have the largest fleet nor the highest landed weight both of which fell to Kilkeel, it did have the highest value of landings in Northern Ireland.
The main markets in Portavogie are normally Wednesday and Friday, usually with heaviest landings on Friday from the boats working five-day, ie Monday to Friday trips.

3.2 Freshness Quality

Detailed organoleptic assessments of fish quality were not carried out during the audit, nevertheless some randomly chosen fish were inspected to gain an 'overall impression' of the quality standards of fish and shellfish on the market. Standards of gutting and washing were considered, as well as icing and boxing practices. The temperatures of some fish were noted.

Just before and during the audit however, the weather had been poor with strong winds that forced most of the fleet to return to port thereby reducing the boats' normal trip length from five to two days. These vessels then landed their catch for the midweek market, although they would more usually have landed for the end of the week. Thus, during the time of the audit older fish from five-day trips were not landed and could not be assessed. In general, fish from two-day trips, apart perhaps from periods of hot midsummer temperatures, will not rapidly lose quality if well handled and properly iced.
From the observations made on the market, the auditors found the quality of the products was favourable both for finfish and shellfish, but as noted above, older fish were not examined during this audit so quality and freshness levels were especially high.

3.3 Gutting and Washing

Spoilage of fish after death is caused by enzymic and bacteriological action, particularly within the gut cavity. By removing the gut contents of finfish and washing the fish, the rate of spoilage may be reduced, however it must be done efficiently and carefully or the bacteria from the gut cavity can spread to the cut flesh, thereby hastening spoilage.

Gutting was judged poor if parts of liver or gut were left in or if the cut extended into the fillet material of the flesh thereby affecting yield, but there was very little indication of poor gutting practice and the majority of the whitefish examined had been well gutted.

3.4 Temperature Control

Temperature control is usually considered the most significant factor affecting the rate of deterioration of fish after capture/death. (see Appendix I) Typically, whitefish remains acceptable for about 10-11 days after capture if it is well iced, but this time period can be reduced to a day or two if left unprotected at high summer ambient temperatures. Prawns spoil much quicker but remain acceptably fresh for up to five days provided they are well iced, see Appendix II.
From the temperature checks made on the market, the temperatures of whitefish were found to range between 3.6°C and 10.6°C. The relatively high temperature of 10.6°C is indicative of poor icing practice, and indeed some of the fish landed to the market did have a noticeable lack or even complete absence of ice in the box. Better use of ice by boats, even on such relatively short trips can make a significant contribution to maintaining high fish quality and should be reflected in prices paid at auction.

Although the freshness quality of landings is acknowledged as high, the temperature checks on landing indicate that temperature control at sea is poor. More significantly unless the temperatures are brought down quickly after landing the fish and prawns will continue to deteriorate rapidly. Note that re-icing the top of boxes has very little cooling effect on the fish or prawns located in the bottom of a fish box. See Appendix II for the effect of icing technique on the quality of prawns.

Figure 1 - Un-iced cod on Portavogie Fishshmarket

That so very little ice was used at the time of the audit might perhaps be explained by the boats knowing that the weather would force short trips on them so they did not feel a need for much ice, but as already noted, quality losses accrue from the time of capture, much faster with higher temperatures.

3.5 Box Filling

Standards of boxing practice at sea are also critical to quality. Fin-fish should be aligned within the box to prevent distortion, with their belly cavities down to facilitate drainage. To prevent crushing and to allow space for sufficient ice to cool the fish, the boxes must not be overfilled.

During the audit at Portavogie it was noted that overfilling was not generally a problem. Although there was some degree of overfilling particularly for prawn tails and fin-fish, there was little obvious evidence of physical damage associated with crushing.
Although some of the boxes on the market had been overfilled, most were not, although the lack of ice should be taken into consideration.

3.6 Shellfish

The standard of washing of prawn tails seen on the market was excellent but that of whole prawns could be improved. The shellfish seen on the market such as brown crabs, velvet crabs and whelks were in good condition. However, most of the whelks had been brought from nearby harbours for onward distribution from Portavogie market, and had been transported uncovered in fish boxes in open car trailers. Although this is a cheap method of transport and whelks are quite hardy animals, the trailers should be covered. This provides protection from airborne contaminants, but also very importantly reduces dessication and thereby extends the 'shelf-life' of the live whelks.

3.7 Transportation from the market

In general, the standards of road vehicles used to transport fish from the market was high, particularly the refrigerated lorries such as were being used by Denholms. The majority of other vehicles (mostly smaller vans) were insulated and refrigerated, and lined out with hygienic, washable, easily cleaned materials.

However, as well as the car trailers referred to in 3.5 above, it was also noted that some open-topped utility-vehicles were being used to transport boxes of fish away from the market after the auction (see Figure 2) The use of such vehicles should be discouraged, for the same reasons as given above: dessication of product and protection from airborne contamination.

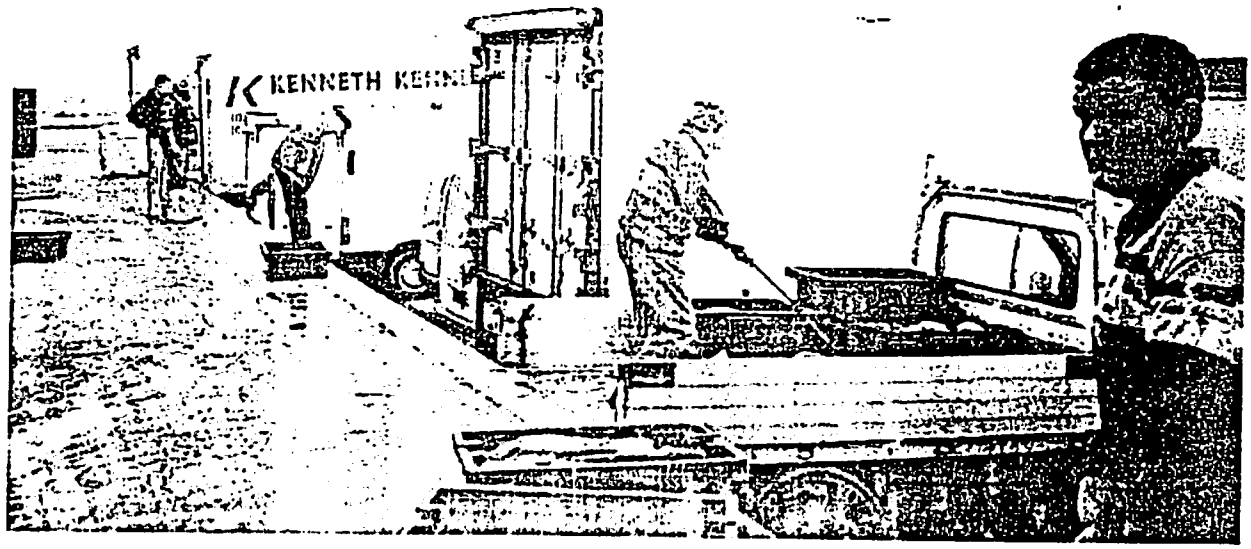


Figure 2. Use of Open Vehicles Ex Market

4 Physical Infrastructure

4.1 Background

The value of landings at Portavogie has risen dramatically over the last five decades (albeit with recent fluctuations), with NIFHA having made capital investments to improve the quality of infrastructure and provision of services that have made the harbour a more attractive proposition for local fishermen and also provided a viable alternative to Ardglass and Kilkeel further down the coast.

Portavogie Harbour serves a local fleet of about 60 fishing vessels, with fuel, fresh water and ice all available locally. There are two slipways, number one with 350 tonnes, number two at 100 tonnes capacities. There is a depth of water of 2.4 m at mean low water spring tides. Vessels drawing more than seven feet of water therefore are not likely to be added to the fleet; not a serious drawback in itself given the large number of vessels already using this relatively small harbour with the obvious congestion and manoeuvring difficulties, although there is a total quay length of more than 600 metres.

NIFHA has been investing in and upgrading the ice plant and the slipway facilities, with the new ice plant now operational.

Figure 3 shows a plan of the harbour. The North Harbour area of hard standing is used for working on nets and gear storage.

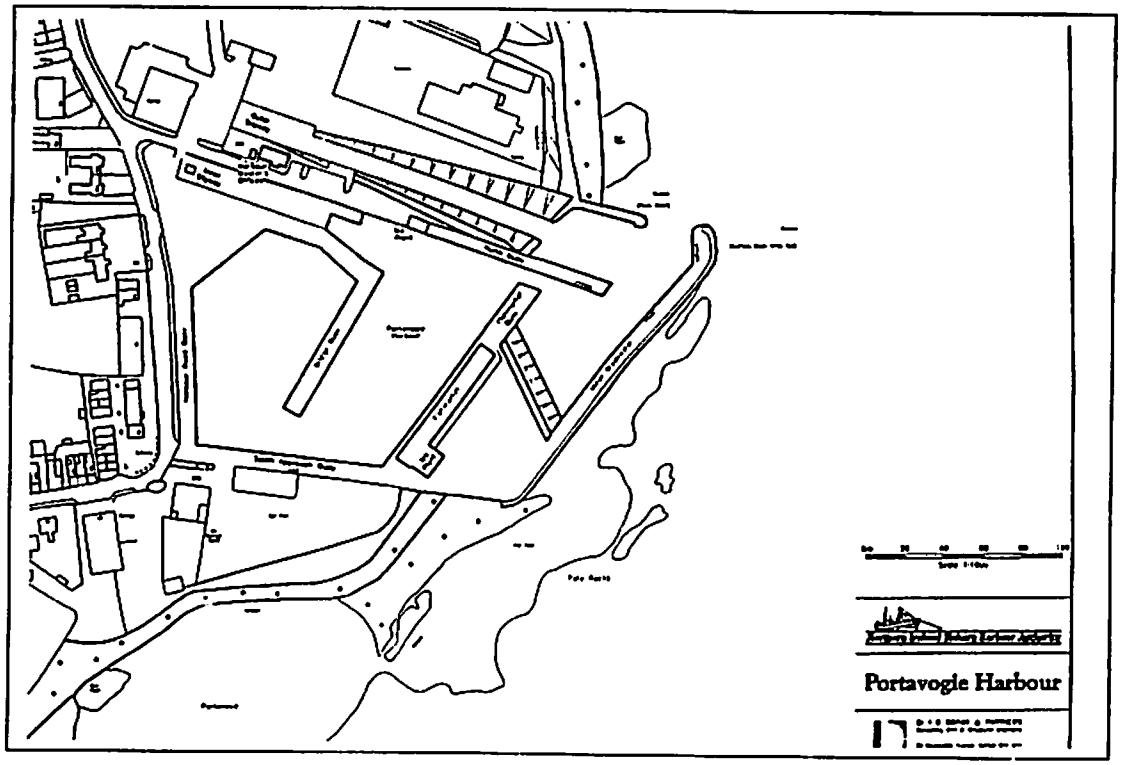


Figure 3 - Plan of Portavogie Harbour

4.2 Unloading Quays and Equipment

The market quay enables perhaps six or more vessels to be unloading simultaneously, depending on their size. Provided that boats move from the market quayside promptly after landing then landings are not delayed. Because of the height of the market quay two electro-hydraulic cranes are provided for unloading to the market, used if vessels' own derricks cannot reach. Transfer of boxes into the market is undertaken manually using hooks and was carried out swiftly with no undue delay. The quay is graded and drains to the dock.

The market quay meets statutory requirements of lighting, safe ladder access and provision of life-saving equipment. During the audit some minor defects were reported to the Harbour Master, his staff rectified the defects most promptly after being informed.

Two electro-hydraulic cranes are provided on the quayside for unloading vessels if the tide is low or their own derricks will not reach. These cranes appeared to be well maintained and in a good state of repair, Figure 4.

Attempts by NIFHA to limit public access to the market quay have not yet been particularly successful. Local opposition may be encountered when such moves are invoked.

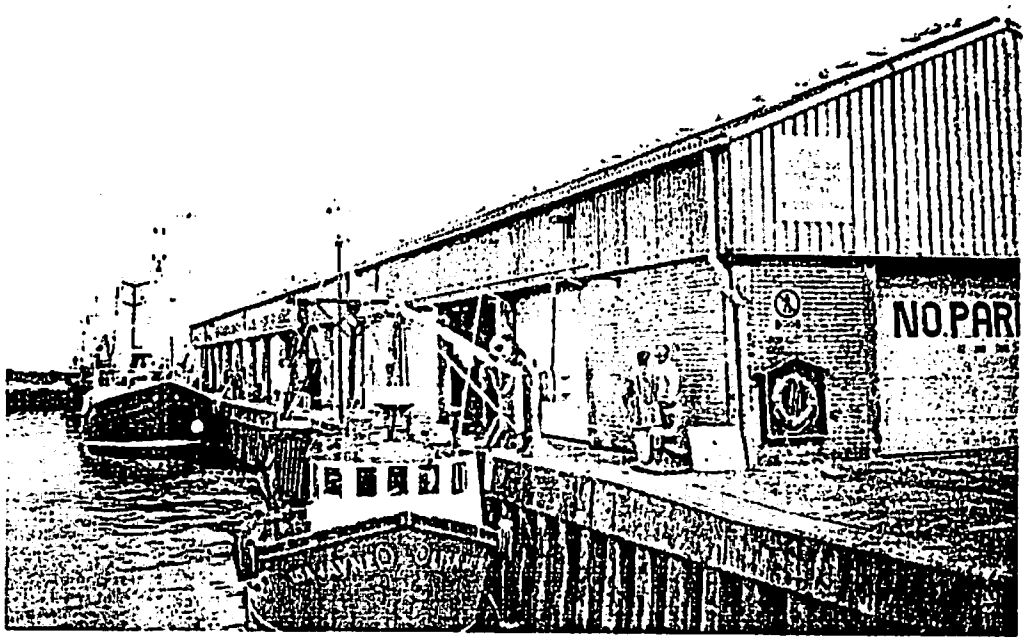


Figure. 4 The fishmarket in use with vessels unloading

4.3 Fish Market Building

The fish market building, as well as providing services for auctioning of fish, also includes office/staff facilities and lavatories, as well as an ice-maker and ice-storage room. The market floor has adequate capacity for current levels of operation. The building is of steel-frame construction with brick/block walls and has a sheet-clad roof. Internal wall surfaces are finished with cleanable and hygienic material. At the time of the audit, the toilet facilities in the market were clean and adequately provided with hot water, soap and paper towels. The market floor was in good condition and graded toward the harbour apron drains. Services were also in good condition. Some drainage is through holes in the market wall which is a poor design feature. Potable water is provided within the market for washdown. The lighting level is very good and required signage of prohibited practices prominently displayed.

Grass was seen to be growing in a gutter pipe at the rear of the market building indicating a buildup of debris and detritus in the gutter, this grass was however removed after it was pointed out to the Harbour Master. A downpipe was missing near the market ice plant and the wall was damp, encouraging growth of algae and slime, another unhygienic feature, this too was swiftly rectified by the Harbour Master.
The building and services are generally well maintained. However, two light fittings were inoperative inside and one outside the building. Some of the fishmarket 'up-and-over' doors were in need of attention where the runners/transport mechanisms appeared to be prone to poor operation.

4.4 Market ice plant

At present the ice plant within the fishmarket building makes ice round the clock and is delivered to the boats in tipping skips by forklift, by arrangement with the Harbour Master and his staff. This is a service provided by NIFHA whilst the new ice plant is under construction, but is somewhat labour intensive and less than ideal operationally. After commissioning of the new ice plant, it is planned to convert the ice-storage room into a chiller-room for short-term storage of fish for the market. This will be a welcome addition to the presently un-refrigerated market hall.

4.5 Forklift Trucks

NIFHA operates gas-powered forklift trucks both inside and outside the market. Denholms also make use of forklifts during and after the auction, however all forklift drivers are trained and certificated and there was no evidence of improper or dangerous driving of forklifts during the audit. While the forklifts are in use in the market the end roller shutter door is left open to allow access for the forklifts, however it was also observed allowing access for seagulls during the auction.

4.6 Market Equipment

All pallets used inside the market were plastic and of hygienic construction. The weighing scales and ancillary equipment used by Denholms' staff was also of suitable construction: washable, impervious and easily cleaned.

4.7 Provision for waste collection and dumping over the sea wall

Skips are provided by NIFHA for disposal of ships' waste. They are emptied periodically, usually as and when necessary, directed by harbour staff. Spent oil is deposited onto the piers from the boats, this is then collected by NIFHA staff and emptied into a bunded storage tank. The bunded tank is emptied by contract with Capitol Oil.

It should be noted that the widespread practice of dumping fish and shellfish processing (and other) wastes over the seawall is unhygienic, a serious eyesore and detrimental to development of a potentially important tourist industry at Portavogie. All sectors of the industry probably contribute to the dumping, it is believed to be considered almost a public right to dump there. However not only do shucked scallop shells and fish processing waste get thrown over, other detritus goes with it, some more polluting than others, Figure 6. The local EHO as well as NIFHA are well aware of the problem, it has occurred for some considerable time, and efforts are being made to seek resolution. In the interim, and prior to effectively controlling access to that section of the harbour, the problem may persist.

4.8 Road Access and Parking

Road access to the harbour is direct and straightforward and there is ample parking space and turning circle space behind the fish market for any vehicles likely to be used during normal operations, including articulated and refrigerated lorries.

4.9 Ice Supply

There has been a disrupted supply of ice to the Portavogie fleet for some time, while alterations to the existing ice plant were considered, chosen and the work implemented. During the audit the new facility was still being installed, with a commissioning date forseen in the near future. There had been difficulties with the old installation in delivering ice to some of the larger boats of the fleet at high tide. This problem has been addressed by increasing the height of the delivery chute to enable bigger vessels to take ice at high water. Unfortunately, the persistent problems with the old system prompted vessels to seek alternative icing supplies, and some have installed on-board systems. Overall demand will therefore be less than it might have been. It is understood ice may be taken for use by local processing factories as well as the boats. Delivery will be on a 24 hour basis, to be operated by a smart card which will be issued to the separate vessels.

5 Operating Practices

5.1 Landing and Handling

Landing and handling operations generally cause no problems, with landings transferred into the market from the market quay apron with little delay or exposure to risk of contamination.

5.2 Market Operations

Due to the continuous process of landings to the market some of the quayside doors are constantly in use and open, but the door at the far end of the market was also kept open. Although the end-door is used for forklift access into and from the fishmarket, better control of the use of all market doors and re-icing of fish on the market as necessary would assist in maintaining chilled product temperatures, particularly in the absence of market refrigeration and during summer.

Handling operations on the market are essentially those associated with de-icing and check-weighing, carried out by Denholm's staff, as there is practically no grading conducted on the market with the exception of hake. No abuse of fish or equipment was observed.

The sales process was conducted unhurried although most fish were removed from the market rapidly after purchase.

5.3 The Auction Sale

The auctions are held in the evenings, 7pm Monday to Thursday and on Friday the fish sale starts at 3pm with the prawn sale at 5pm.

Prior to sale much of the product in the market is weighed and re-boxed by Denholms' staff. Hake was graded into seven size grades, but shellfish did not appear to be handled at all. There was little or no re-icing done after weighing and grading, and quality grading by PO representatives was minimal. The auction sale proper was somewhat protracted.

5.4 Cleaning and Hygiene

NIFHA employs a market inspector at Portavogie who, although not having powers of enforcement, does actively encourage compliance with the code of practice for the fish market. He is well respected by market users and his genial admonitions are taken in good heart and not viewed as heavy-handed imposition. His monitoring presence on the market is a positive and laudable innovation by NIFHA.

The standard of cleaning of the market, staff facilities, equipment, quay aprons and loading bay areas was of acceptable standard. All facilities are checked regularly by Harbour Staff according to written cleaning, inspection and maintenance schedules, listed in Appendix V .

Standards of personal hygiene on the market were generally low. Smoking was not observed but there was evidence of drinking and standards of dress of the buyers was poor. However, standards of personal hygiene and dress for Denholms staff and the market inspector were first class.

There was no walking over boxes and no evidence of infestation by vermin.

6 Management Controls

The Northern Ireland Fishery Harbour Authority owns and is responsible for the general management of port operations at Portavogie Harbour. This statutory body also has responsibility for the two other main fishing ports in Northern Ireland, Kilkeel and Ardglass.

It is managed locally on a day-to-day basis by a Harbour Master and his staff. Staff duties include defects reporting (according to the check sheets in Appendices III and IV) general light maintenance, cleaning, operation of and distribution of ice from the market ice plant and safety inspections. Written job descriptions exist for all NIFHA staff, and they have all attended basic food hygiene training courses and counterbalance forklift truck training where appropriate.

There is a code of practice that sets overall standards for the port and its operation with regard to quality control, AppendixV, and NIFHA has also produced a strategic plan for the future of these three ports.

The Local Authority Environmental Health Officer attends the market on a regular basis and is in discussion with NIFHA and the local council regarding possible alternative provision for local fish waste to alleviate the problem of dumping over the sea wall. It is to be hoped that suitable alternative arrangements can be provided and their use encouraged or enforced.

Communications between the trade sectors and the Harbour Authority locally are informal. The POs grade the fish on the market, but the quality of grading is not rigorous.

A Waste Management Plan as required by the Merchant Shipping Notice M1659/MARPOL 73/78 has been submitted by the NIFHA and accepted by the M.S.E.A.

NIFHA employs a 'market inspector' who appears to be effective in encouraging compliance with the Code of Practice.

7 Recommendations

7.1 Producer organisations should encourage better care of the catch at sea, particularly temperature control by correct icing practice and better washing of whole prawns, and discourage overfilling of boxes.

7.2 NIFHA pro-actively engages with the local authority and environmental health departments to collaborate on ways and means of providing alternative disposal methods for locally-produced fish and shellfish waste, and thereby to bring an end to the widespread practice of dumping over the harbour outer wall.

7.3 That the harbour authority encourage staff, market users and forklift drivers to make a more disciplined use of market doors and help to prevent windborne contamination and seagull access to fish on the market. Consideration should be given to installing screen curtains on the doors to reduce seagull entry and maintain a more controlled environment for storage and sale of fish.

7.4 Implement refrigerated storage on the fish market, and encourage it's use particularly during warm summer weather.

7.5 Transport of fish and shellfish both to and from the market should be in covered vehicles, and they should also be insulated and refrigerated for summer use.

7.6 Agencies, PO's and merchants etc whose staff are directly involved in handling of fish and shellfish, should introduce relevant training for staff in food hygiene and quality control/assessment as appropriate.

7.7 Expand the Harbour Authority Cleaning/Maintenance Schedules to include the ice plant and pest control inspections.

7.8 Take steps to further enforce the Code of Practice, particularly the standard of dress on the market.

Appendix 1

Torry Freshness Assessment Scoring System

Torry Freshness Assessment Scoring System

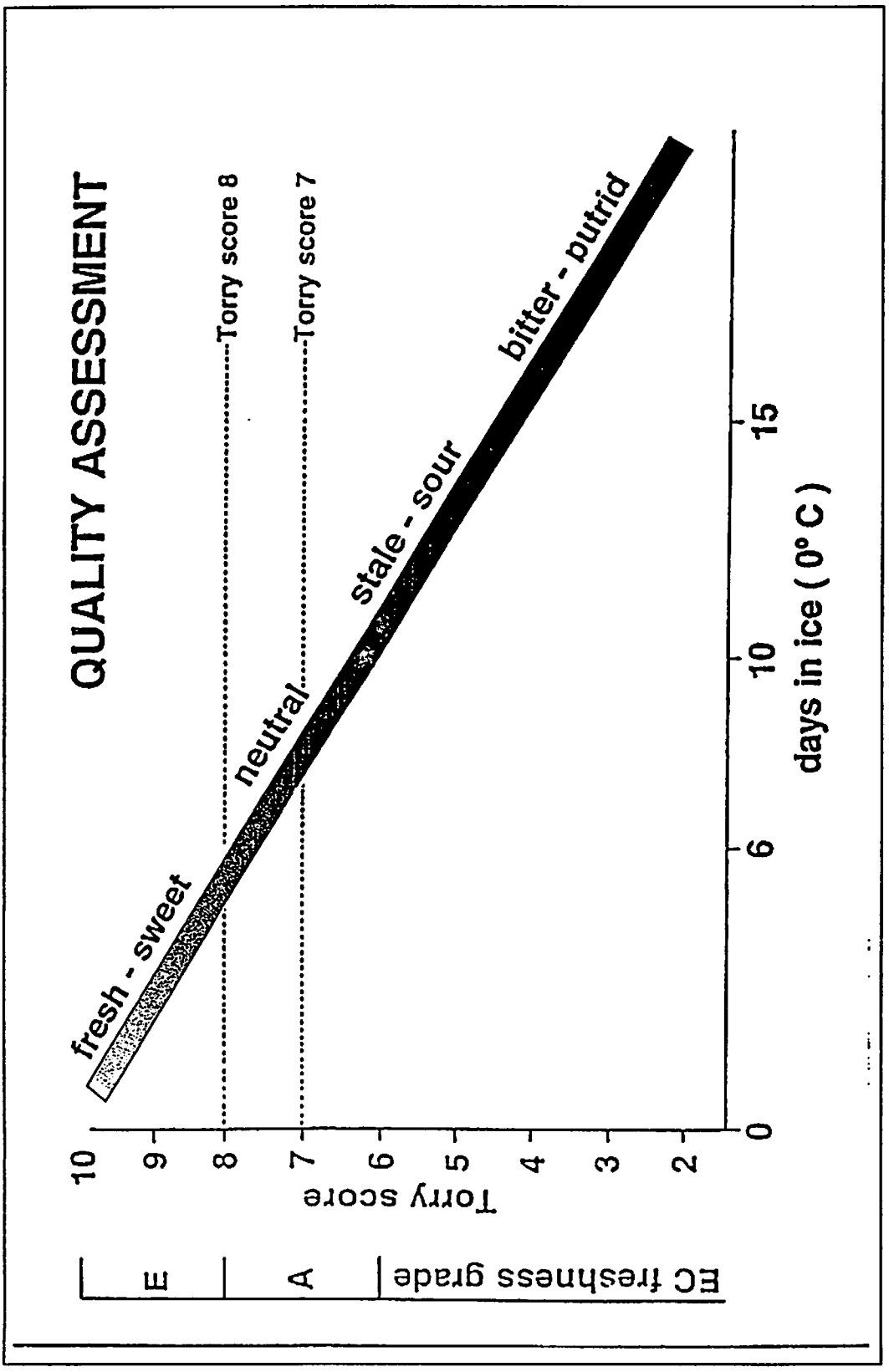
The Torry Freshness Scoring System judges freshness quality using external appearance and odours as indicators of freshness on a scale of zero to ten. Appendix I-ii shows the relationship between Torry Score, the number of days the fish is held in ice and the eating quality of white fish.

Seafish recommend that white fish sold on the market be of Torry Score 8 or above (EU freshness grade E) in order that the product reaching the consumer has a good chance of retaining sweet, desirable flavour and not have undesirable sour or bitter flavour.

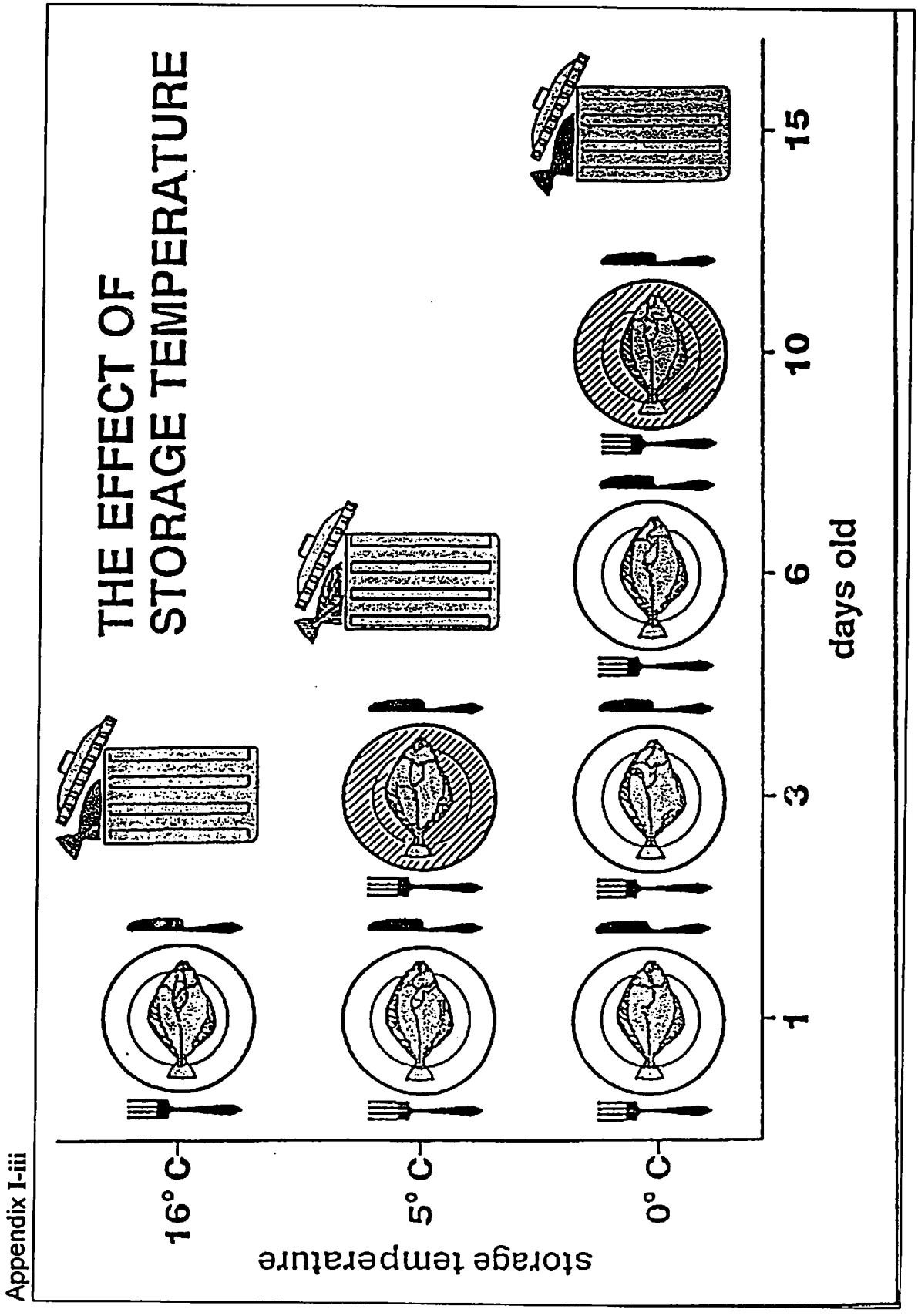
Note that the temperature control is by far the most significant factor affecting the rate of deterioration of fish and that at temperatures above that of melting ice, spoilage is greatly accelerated as described in Appendix I-iii.

Typically white fish remains acceptable for about 10-11 days after capture if well iced, but this can be reduced to a matter of a few days if left unprotected at summertime ambient temperatures.

For Nephrops fisheries quality is judged using external appearance and raw odours as indicators of freshness on a scale zero to five. Nephrops remain acceptable for consumption for up to eight days if they are held at the temperature of melting ice.



Appendix I-ii



Appendix I-iii

TECHNICAL INFORMATION SERVICE

SEAFISH

The Effect of Icing on the Quality of Trawled Whole *Nephrops*

Ref No:1994/29/FT

The Need for Ice

Nephrops are a highly rated seafood because of their succulence and flavour - when in good condition. Ice has been little used on short trips as it was considered that *Nephrops* need to be kept alive to maintain quality whereas icing killed them. The practice of weighing when landed also required the removal of ice which resulted in delay and physical damage to the *Nephrops*. However, trials have shown that trawled *Nephrops* deteriorated rapidly at high ambient temperatures with resulting loss of freshness and reduced yield of premium product. Correct icing minimises this deterioration in Nephrops which are due for some form of fresh or processed product. *Nephrops* destined for the live trade should not be iced.

Seafish Trials with Icing at Sea

- Comparative commercial trials were carried out from Mallaig on the West Coast of Scotland during the summer. Correct icing to the top and bottom of the boxes was compared with the usual practice of not icing at sea on day boats and top only icing on two day trips.

- To remove the need for weighing ashore, *Nephrops* were weighed at sea using a mechanical check weigh scale (developed by Seafish). All the boxes were further top iced as necessary at landing, as is usual commercial practice.

- The *Nephrops* were then consigned in the usual refrigerated transport to arrive at an East Coast processor within 12 hours of landing.

- The processing of the catches was monitored to compare product quality and commercial yields when sorted by the processor. *Nephrops* not suitable for the premium whole *Nephrops* product were diverted to lower value tail meat products.

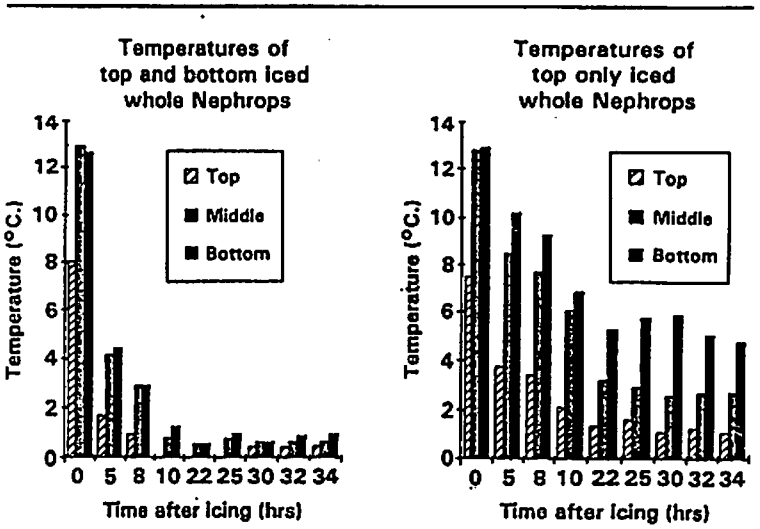
- Further trials were carried out to establish the effect on the eating quality of whole *Nephrops* when subjected to delays of 12 and 24 hours at ambient temperatures before icing. These particular samples were dipped in 3% sodium metabisulphite 24 hours after capture.

Sea Fish Industry Authority, Seafish House, St. Andrew's Dock, Hull HU3 4QE. Tel: 01482 327837 Fax: 01482 223310

Findings

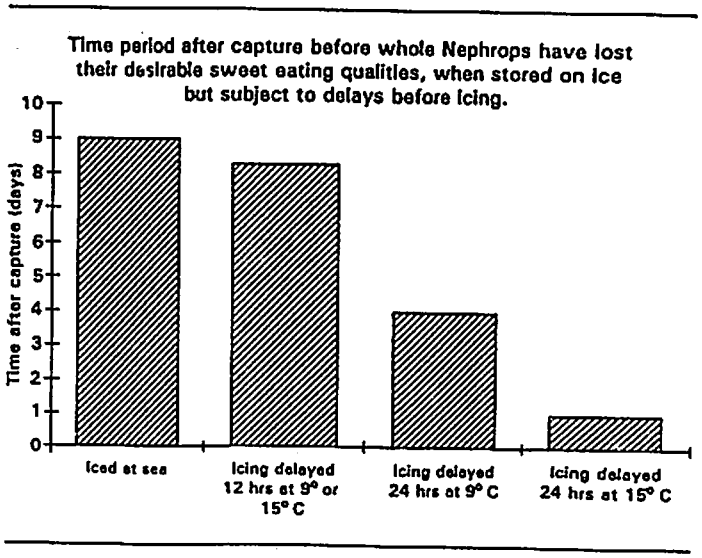
Temperature

- Direct top and bottom icing chilled *Nephrops* to less than 2°C within 10 hours.
- Top only icing was only partially effective as *Nephrops* in the middle and the bottom of the boxes remained poorly chilled through the processing.
- *Nephrops* left uniced aboard and beyond landing remained above 14°C.



Quality

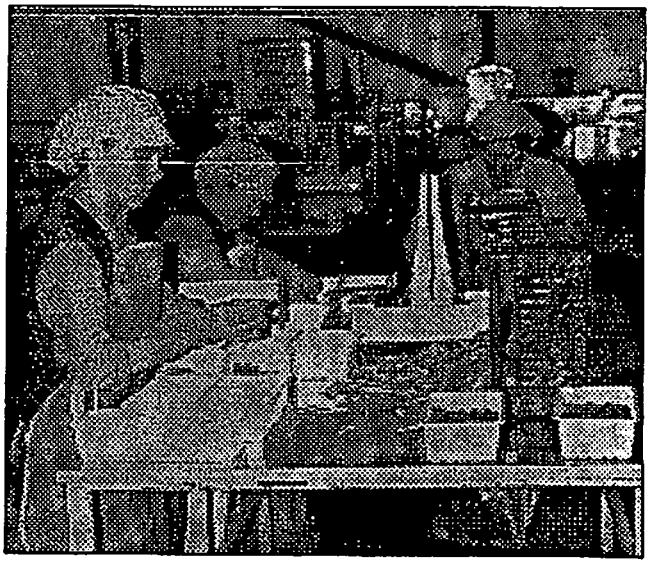
- On arrival at the factory the observed standard of freshness of the correctly top and bottom iced *Nephrops* was markedly better than those handled without adequate icing.
- A delay of 12hrs before icing resulted in some loss of freshness and a 24hr delay can result in the loss of all the desirable sweet eating qualities of the *Nephrops*.



- Sodium metabisulphite dipping of whole *Nephrops* reduced blackening but did not prevent spoilage of the flesh.

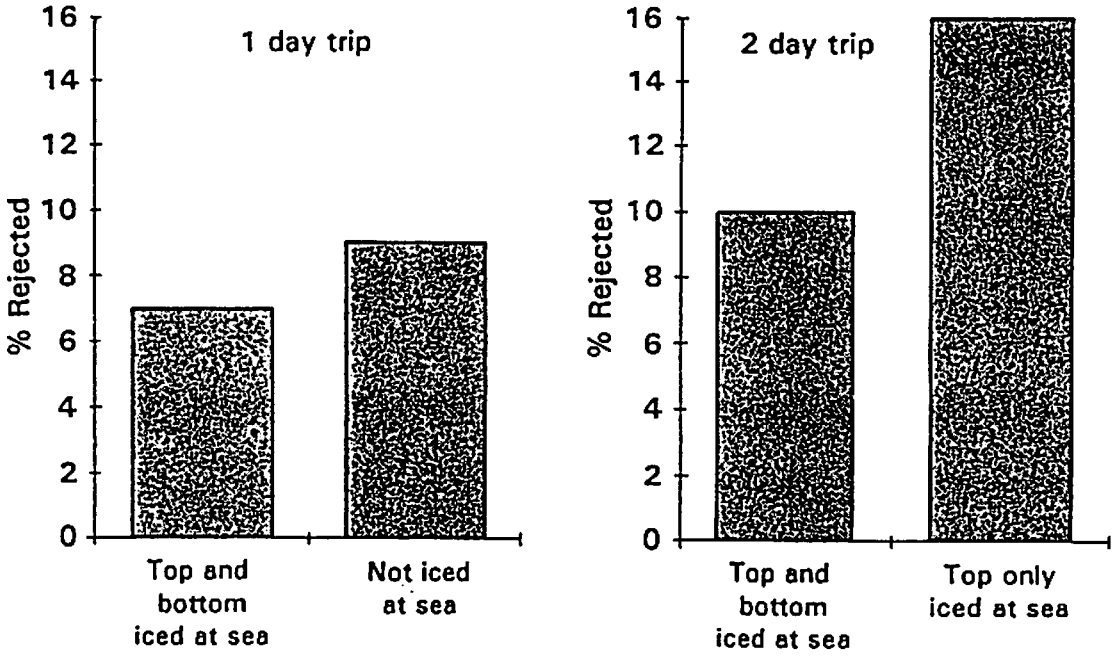
Yields

- Delays before icing and inadequate icing increased the commercial rate of rejection from the premium whole *Nephrops* product.



Whole *Nephrops* being graded for quality and size at factory.

Percentage of Nephrops rejected for premium product



- Weighing at sea returned weights at factory consistently within 4% of the 19kg (3 stone) unit with no boxes under weight.

- Following the trials the processor involved arranged with their trawled *Nephrops* suppliers for the catches to be properly iced at sea and not tipped until weighing at factory.

Recommendations

- Trawled *Nephrops* are highly perishable and need to be promptly iced at sea and landed soon after catching to ensure high yields of best quality product.
- *Nephrops* (both whole and tailed) should be top and bottom iced with sufficient ice to maintain chill temperatures. For a standard 70 litre box this corresponds to a box loading of about 19kg (3 stone) of whole *Nephrops* and 22kg (3.5 stone) of tails.
- The use of papers between the ice and *Nephrops* is generally not recommended as it will reduce the effectiveness of chilling.
- The practice of tipping and de-icing of *Nephrops* at the quayside is not recommended as it causes damage to the *Nephrops* and reduces chilling. It can be avoided by weighing at sea and/or at factory.

For further information and reports on this work please contact the Fish Technology Group at the address below. Guidelines on good live handling practice can also be obtained from the Marine Technology Group at the same address.

The Sea Fish Industry Authority
Seafish House
St Andrew's Dock
HULL HU3 4QE
Telephone: (01482) 327837
Fax: (01482) 223310

Appendix II

Seafish Technical Information
"The Effect of Icing on the Quality of Trawled Whole Nephrops"

Appendix III

Portavogie Fishmarket Cleaning Schedule

Appendix III

PORTAVOGIE FISHMARKET CLEANING SCHEDULE

DAILY - Toilet area washed down with fresh water.
Sanitiser (sodium hypochlorite 50ppm) sprayed on floor, sinks and toilets.

Main floor power hosed (as required the floor is scrubbed with caustic based detergent at 1% solution).

WEEKLY - Main floor, quay side and loading bay - scrubbed with caustic 1% sol and power hosed.

MONTHLY - in addition to weekly clean the whole area is sanitised with 250ppm sodium hypochlorite.

Walls power washed with fresh water and 1% caustic detergent where necessary.

Person responsible -

Daily clean Morning shift checked by Foreman HM.

Weekly clean _____

Monthly clean _____

6 MONTHLY -
- light covers removed and cleaned
- doors and tracks cleaned by hand
- 250 ppm sodium hypochlorite

Daily observation of fixtures and fitting shall take place with breakage of light covers, lamps or other potential contaminants recorded.

Glass is not permitted in the Fish Market except for 2 Avery Scales operated by Denholm Fish Selling.

Appendix IV

Fishmarket and Harbour Inspection Checklists

Fishmarket Light Inspection

BYE ROWS	Rear MIDDLE Front	ACTION
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
REAR OF Market		
1		
2		
3		
4		
FRONT OF MARKET		
1		
2		
3		
4		
5		
TOILETS		
1		
2		
3		
4		
5		
HUT 5		
PHONE		
Sample room		
1		
2		
3		
4		

_	LIGHT INSPECTION ROADS I QUAYS and SLIP No. 1	
	Number of BULBS working	ACTION TAKEN
Tower lights -		
1		
2		
3		
4		
5		
6		
7		
8		
North quay lights		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
South quay		
1		
2		
3		
4		
Princess Ann road		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
Slipways		
North end		
1		
2		
3		
4		
South end		
1		
2		
3		
4		

LIFEBUOY Checks

DATE: .

ACTION TAKEN OR TO BE TAKEN

	All power points around Harbour/ F/market	
NUMBER	DATE	
		ACTION TO BE TAKEN
1		
2		
3		
7		
8		
Princess Ann Road		
Harbour offices		
Outside H /offices		
North Ice Plant		
South Quay Kiosk		
1	Power Points in fish market	
2		
	All switch gear HUT 5	
	Sample Room lights, switches and power points	
	Fishmarket toilets lights/switches/water heater	
	Checked By	

	Fish Market Door Checks	
	DATE	
Door No		ACTION TAKEN OR TO BE TAKEN
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
	Checked By	

Harbour Office, Bull nose, Outerbreak water		
	Light checks Date.....	
Harbour Master office	Action taken	
Fishery office		
Customs office		
Kitchen		
TOILET		
Stairs		
Landing		
Porch		
Bull Nose		
Breakwater		
Ground Floor		
kitchen		
Drying Room		
Toilet		
Workshop		
Garage		
Restroom		
	Checked By	

Harbour office inspection

	DATE.....	
		ACTION TAKEN OR TO BE TAKEN
Lights		
H'masters		
F 'Office		
C' Office		
Porch		
Stairs		
First Floor		
kitchen		
Toilet		
Hand Basin		
Landing		
Sockets		
H'masters		
F'office		
C' Office		
	Checked By.....	

QUAY SIDE INSPECTION		
	DATE	
		Action Taken
North slipway		
North		
Road side		
Bridge		
South		
Fishmarket		
Breakwater		
First set of steps		
Second set of steps		
	Checked By	

Appendix V

Code of Practice for Portavogie Fishmarket

CODE OF PRACTICE FOR PORTAVOGIE FISHMARKET

ACCESS TO MARKET BUILDINGS

Access shall be restricted to the following times and people.

12 noon to 6.45 p.m.

- skippers, crew and vessel owners while unloading their catch - NIFHA personnel
- Fisheries Officer
- Environmental Health Officer - PO's grading staff
- licensed salesmen

Once off loaded the vessel crew members should vacate the building

6.45 p.m. to 9:30 p.m.

- skipper, vessel owners or nominated representative (to observe sale or tend goods).(Crew members while unloading)
- licensed salesmen
- registered buyers
- NIFHA staff
- Fisheries Officer
- PO's grading staff
- Environmental Health Officer
- drivers and transport personnel collecting bought product shall only enter the market whilst collecting goods

9:30 p.m. to 8 a.m. -
Market closed

- a.m. to 12 noon -
  NIFHA staff
- Environmental Health Officer

- The market shall be closed between 8 a.m. and 12 noon each day to allow cleaning and maintenance.
- All Catch must be sold in order of day of landing. i.e. first in first out.
- All product shall be removed from the market by 9:30 p.m. each day.
- Any product which has been through primary sale and is still in the market at 9:30 p.m. shall be removed from the building If the product owner wishes to store the

product in the market he may do so after obtaining permission from the Harbour Master and providing space is available. A storage charge of £1.00/ box/ charged to the owner, per 24 hr. period or part thereof commencing at 9:30 p.m.. each day.

- All materials and product left at any time in the Market shall be left at the owners risk.
- No Unauthorised Visitors are permitted in the MArket

PERMITTED ACTIVITIES

The following activities are permitted in the market building:

1 Primary sale of catch.

2 Weighing/sorting prior to primary sale.

3 Interim storage of clean boxes for issue to vessels with permission and subject to fee.

4 Transit storage of fish not being offered for sale, with permission and subject to fee.

5 Rinsing boxes in the designated area - (cleaning boxes is not permitted within the market). A charge will be made for use of resources.

6 Taking on of Drinking Water from designated stand pipe's. 7. Tipping of bought fish from Auctioneers box to buyer's box.

The Authority may consider applications for other activities providing they are complimentary to the principal activities of the fish market and in consideration of an appropriate fee.

ACTIVITIES NOT PERMITTED

The following activities are not permitted (which includes any activity not specified as permitted) in the market building:

1 Operating a business from the market without license from the Authority.
2 Sorting, grading, packing of fish after primary sale.
3 Cleaning boxes, vehicles, trucks etc.
4 Refuelling of vessels while berthed at the market quay. Repair of vessels while berthed at the market quay.
5 Secondary sale of catch
6 Using resources or utilities beyond those associated with the agreed permitted activities.
7 Giving free product to visitors or general public
8 Activities noted in the NIFHA Market Rules

HYGIENE & HOUSEKEEPING

- Clean empty fish boxes may be stored in designated areas by written agreement with the Authority. Storing boxes in the chill rooms is not permitted.
- Any boxes outside the agreed area; or dirty boxes; shall be removed from the market.
- Any individual wishing to keep clean boxes in the market for issue to vessels must apply in writing to the Harbour Master. Provision of storage space shall be charged at a rate of £O.OOp/M^3/month for Licensed Salesmen; and a rate of £5.00 /M^3/month or part thereof for all others.
- To facilitate full cleaning of the market all boxes and equipment (with the exception of scales) shall be cleared from the market by 8 a.m., each Saturday.

FORK LIFT TRUCKS

- For safety and insurance reasons the Authority will only permit 1 FLT to operate in the market building
- The operators of this truck must provide evidence of current FLT operators certificate and current Public Liability insurance to a value of £10m and Employers Liability insurance to £5m.
- Only gas or electric fork lift trucks shall be permitted in the market building
- All forklift trucks, pallet trucks or similar shall be removed from the market by 8:00a.m.each day. They shall not return before 6.45 p.m.

DISCLAIMER

The Northern Ireland Fishery Harbour Authority noes not accept responsibility for any loss or damage to property howsoever caused, occuring on Northern Ireland Fishery Harbour Authority property or as a result of any activity carried out by the Northern Ireland Fishery Harbour Authority, its servants or agents or those using the Harbour facilities.

DEFINITIONS

Primary Sale - The first occasion of trading of a catch.

Secondary Sale - subsequent sale of a catch following its primary sale.

Appendix VI

Site for Waste

Appendix VI