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7 March 2001

Dear Mr Rickard

## **IMPROVING WINTER DRIVING CONDITIONS**

Thank you for your letter dated 5 February 2001 enquiring about the actions taken by the Department in response to the Comptroller and Auditor General's Report on Improving Winter Driving Conditions (HC 836 of Session 1999-2000).

As you may know the Minister has initiated a review of Roads Service's Winter Service procedures. To this end a Steering Group and Working party have been formed and the Minister has indicated that he will consult with the DRD Assembly Committee during the course of the review.

My response to your specific queries is as follows:

1. *"Paragraph 1.5 and 1.7 record that Roads Service's salting criteria allows salting of routes carrying 1500 or more vehicles per day."*

Road Service has not carried out a review of the findings of the Cost Benefit Analysis that was carried out in 1995 to produce the salting intervention levels. However, the current Winter Service Review will consider these salting criteria.

2. *"Paragraph 2.6 says that Roads Service intended to link payments to the performance of the supplier under revised arrangements for providing weather forecasts, due to come into effect in October 1999."*



The provision of Open Roads forecasts by the Met Office to Roads Service from October 1999 to April 2004 was agreed by a Memorandum of Understanding (MOU) and Clause 4. (3) d includes the following statement :

“The fees payable to UKMO by Roads Service for the annual invoice period will, for every 1% fall in accuracy below 87%, be reduced by 2% of the total fees.”

The Accuracy of 87% is the contracted accuracy detailed in the MOU for the provision of forecasts. The term UKMO refers to the Met Office.

An independent consultant Vaisala Ltd. produced a statistical report on the Met Office forecasts for the Winter Season 1999/2000, which found an overall forecast accuracy of 89.6%. Accordingly, no reduction in payment was triggered for that particular year. A similar exercise will be undertaken for the 2000/01 season.

3. *“Paragraph 2.11 of the Report reports that no post-implementation reviews had been carried out on the thermal mapping system.”*

We have decided to undertake a post – implementation review of the thermal mapping system in conjunction with the current Winter Service Review.

4. *“Paragraph 2.15 of the Report recommends that codes should clearly spell out the use to be made of thermal maps, and paragraph 2.20 highlights a need for formal instructions to assist staff responsible for making salting decisions.”*

The formal instructions issued to staff prior to the winter season, and the Associated Action Codes, have been altered in line with the NIAO recommendations. Please see paragraphs 3 and 7 of the minute attached at Annex 1 and the appended Action Codes

5. *“Paragraph 3.13 recommends that Divisional and Headquarters Managers should undertake ongoing sample reviews of salting decisions throughout the winter.”*

Each Divisional Maintenance Manager carries out sample reviews of the decisions made by the duty controllers during the winter season, see paragraph 7 of Annex 1.

In general the reviews have supported the decisions of the duty controllers having regard to the information available to the controllers at the time of the decision. It

has not therefore been necessary to alter the guidance given to the Divisions.

Yours sincerely

*Pauline Boyle*  
R B SPENCE

**From:** G P Fraser  
Director of Network and Customer Services

**Tel:** (5)40462

**cc:** J Drew  
Winter Maintenance W G  
R Crilly  
A Coffey  
J Shaw

**Date:** 09 October 2000

**To:** Divisional Roads Managers

## **WINTER SERVICE 2000/2001**

### **Introduction**

1. The 2000/2001 Winter Service Season is almost upon us and I am sure that the excellent work carried out by Roads Service Staff, in adverse weather conditions, will be maintained at the same high standard as in previous seasons.
2. This year I would ask you to make a special effort in seeking to improve the way we deal with requests for information from the media. I would ask you to stress to all staff involved in Winter Maintenance the importance of ensuring that responses to requests are as accurate and timely as possible so we don't lose the good public relations that our actions on the ground fully deserve. This applies to all newsworthy incidents about road closures or significant traffic disruption whether they are the result of wintry conditions or other weather-related incidents that occur outside the winter season.

### **Winter Service Operations**

3. The Winter Maintenance Guidelines issued in 1996 continue to apply. It should be noted that the wording of the action alert codes has been further modified this year to clarify the use of thermal mapping. (A copy of the amended codes is attached to this minute as appendix 1).
4. Divisions should continue to keep their salting schedule under review to identify routes that need to be added to or removed from the schedule, in accordance with the criteria.
5. In the event of emergency conditions, the motorway and trunk network should receive priority treatment as resources allow. As you know, our optimised salting routes have been designed to cater for up to 20 g/m<sup>2</sup> precautionary salting. Each Division must have suitable arrangements in place in the event that higher salting rates are necessary.

6. Each Division retains client responsibility for routes within its geographical boundary, for example, when providing situation reports to RSHQ or handling complaints and queries about the provision of our winter service operation. This applies even if responsibility for initiating the action lies with an adjacent Division.
7. In view of the recommendations of the NIAO I will expect duty controllers to continue to make best use of the thermal mapping system in their decision making. Roads Service is also obliged to formally monitor duty controller decisions on a sample basis and I would be pleased if you would arrange the following action:-
  - at least 2 decisions of each duty controller, taken on marginal nights, over the 2000/2001 season to be reviewed by the relevant PPTO Network Maintenance Manager or other appropriate senior manager;
  - the review to be undertaken in discussion with the controller soon after the event;
  - the review to be based on what the controller knew, or could reasonably have been expected to know, at the time of decision;
  - a written note of each review to be retained for future audit inspection; and
  - written confirmation to RSHQ at the end of the winter season that reviews have been carried out and that notes of the reviews have been retained for audit purposes.
8. The pre-season software service and update, including the installation of new software on all IceView PC's are now complete. The new software comprises:-
  - IceUpdate (the faster, more reliable sensor and forecast downloading software)
  - Icelog (archives forecast and actual minimum temperatures over 24 hr period)
  - Status Map trial on some Pcs ( flags up on a vector map the current sensor readings)
9. The Open Road Forecast service started on Sunday 1 October 2000 and will end on Monday 30 April 2001.
10. The Winter Service stand-by period will start at 16.30 on Thursday 2 November 2000 and end at 08.00 on Thursday 29 March 2001. When frost or snow occurs outside this period it should be dealt with on the following basis : -
  - Sporadic occurrences should be covered by calling winter service staff in accordance with long-standing procedures; and

- Exceptionally, in prolonged periods, additional stand-by will be authorised on a Province-wide basis. When you think this warranted please contact Jack Shaw RSHQ tel. 028 9054 0910 who will liaise with other Divisions.
11. Please advise the Met. Office of the names and contact details for Duty Controllers, together with the Duty Controller rota for the winter stand-by period, including weekends and public holidays. All staff should give their consent before being included on the stand-by rota.
  12. You should provide a salt stock monitor every month (copy form attached). As the Winter Service Report is based on a financial year basis, salt stocks and usage figures should include the salt usage from the beginning of the financial year.

### **Communications**

13. Accurate and timely information on weather related traffic problems or other operational emergency situations are important. In adverse weather conditions RSHQ staff are often asked to provide situation reports for the media through our press office. These reports are usually needed by 10.30 am on the day in question. In addition, RSHQ staff are also frequently asked to give media interviews at short notice regarding the situation throughout Northern Ireland. We can only provide this service with the continued assistance of you and your staff and would ask that you ensure the following action is taken, not only during the Winter Service period but throughout the year.
  - ALL abnormal or newsworthy incidents must be reported to RSHQ. Reports should be sent to RSHQ through J Shaw as soon as details of the incident are available. Appendix 2 sets out suggested incidents, which might be deemed abnormal or newsworthy.
  - Reports on newsworthy incidents that have occurred outside normal working hours MUST be with RSHQ by 10.30 am on the next working day.
  - Please do not wait to be asked to provide a report – if in doubt send one anyway. Forms for this purpose are attached, one for storms and floods and the other for ice and snow conditions.
  - During the Winter Service stand-by period Divisions should prepare and retain daily records of road conditions and action taken. There is no need to forward these to RSHQ except in the event of abnormal or newsworthy incidents as noted above.
14. I appreciate that in times of adverse weather conditions Divisional staff are working hard to keep roads and footways clear but from a public relations viewpoint it is important that during wintry conditions, RSHQ is in possession of accurate information as early in the day as practical. Can you please emphasise this to your

staff and assure them that the information they provide is vital.

- 15. I should be grateful if you would confirm that arrangements in your Division will meet the requirements set out above.



**G P FRASER**

## Winter Service Action Codes

EXPECTED ROAD CONDITIONS *	ACTION	ACTION CODE	DESCRIPTION	RATE OF SPREAD Grammes per M <sup>2</sup>
No frost or snow	Stand down all vehicles and patrols.	Code 00	No action	Nil
Possible frost or snow	Decision deferred pending update of thermal maps or reports from scouts. Squads to report subsequently if needed.	Code 01	Patrol	Decision postponed
Slight frost, isolated patches or widespread on wet or dry roads	Decision deferred pending update of thermal maps or reports from scouts. All squads to report in advance.	Code 02	Report to depot	Decision postponed
Slight frost, isolated patches or widespread on wet or dry roads	Treat routes identified by engineer on duty.	Code 05	Action reduced routes	10
Slight frost, isolated patches or widespread on wet or dry roads	Treat all routes on schedule.	Code 10	Action all routes	10
Heavy frost, wet roads; roads possibly in treacherous condition with icy patches	Treat all routes on schedule.	Code 20	Action all routes	20
Snow forecast	Treat all routes on schedule. Consider mounting snow blades.	Code 30	Action all routes	30
Snow falling or packed ice	Treat continuously all routes on schedule and if necessary mount snow blades.	Code 40	Action all routes	40
Emergency	Restrict Clearance operations to priority routes and mobilise all resources including hired plant.	Code 50	Action priority routes	40

\* Road conditions expected by the duty controller after reference to all available data, e.g. Thermal Maps, Open Road Weather Forecasts and Scout Reports



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## ANNEX D

CORRESPONDENCE OF 26/06/01 FROM MR R SPENCE,  
ACCOUNTING OFFICER OF THE DEPARTMENT FOR REGIONAL DEVELOPMENT.

### Improving Winter Driving Conditions

Thank you for your letter of 23 May 2001 about the NIAO report on Winter Service.

When this report was published in November 1999 it was seen as a positive endorsement of Roads Service's Winter Service procedures. We are, therefore, keen to clear up any further queries that your Committee may have.

I can confirm that the post-implementation review of thermal mapping will be submitted for DFP approval in line with DAO(DFP) 8/94.

You raise the point about formal instructions for the use of Action Codes and whether they should give explicit guidance on the degree of reliance to be placed on Thermal Maps.

I am sure your Committee will appreciate that decisions on salting are not easy. These complex decisions can only be taken using professional judgement exercised in the light of many information strands: the site-specific temperature forecast, the forecast road state, thermal map temperature predictions, actual temperature profiles, and information from scouts. Thermal maps are only one element (albeit an important element) of a decision-making process that relies heavily on judgement and experience.

The Department believes that those who exercise this heavy responsibility should have the best tools available to assist them, including thermal mapping. However, salting decisions are more of an art than a science, and the practitioners are strongly of the view that an explicit link between thermal maps and salting action is not good practice, as there is no guarantee that rules will be appropriate in all situations.

Roads Service has given a few examples where strict adherence to thermal maps would give poor service or poor value for money:

- Thermal maps predict the minimum overnight temperature. However, this may be for a short period at a time when traffic is minimal and salting action could not be justified (e.g. 2:00am). Interpretation is always necessary.
- Thermal maps predict only road surface temperatures, whereas the salting action depends on road state and temperature. For example, even if the thermal maps predict  $-5^{\circ}\text{C}$ , there is no point in salting if the road surface is dry and there are high winds. The point can be simply illustrated by the attached thermal map. *[Not included in Report]* It shows a small number of yellow and red routes indicating routes above freezing, with most salting routes shown to be at or below freezing (green and light blue). However, on the night in question road surfaces were generally dry, so controllers took no salting action apart from some roads in the Ballymena area where local conditions required it. *Had there been a direct link between the thermal maps and salting action, then unnecessary, widespread and wasteful salting would have taken place.*
- Thermal maps depend on the minimum temperature predicted by the Met Office. If the prediction is optimistic, the thermal maps will call for less gritting than is actually required. An experienced controller will spot this anomaly and take appropriate action.

I trust that the Committee will be reassured by this response. However, if the Committee require further clarification on this subject, could I suggest that the Roads Service arranges an informal meeting to demonstrate the various tools available and discuss the matter in depth. This might take place next Autumn when the winter forecasts and associated thermal maps recommence.