

East of England Transport Information Progress report: September 2010

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September 2010

Report of a study begun at the instigation of the Department for Transport

1 Recommendations

The severe shortage of money to improve the road system calls for urgent further work to maximise the value of existing assets. There is a need to demonstrate the business case for improving the management of the road system by better real-time sharing of information. The main motivation for this work should be to help the economy by improving the efficiency of the transport of freight, and better planning of journeys, thereby reducing congestion and lowering vehicle emissions.

Topics for study should include

1. Creating a common web-based means to access all available relevant information, and of methods to filter out what is needed for specific purposes and to assess its reliability. (Section 3 below)
2. Adapting protocols so that local authorities can contribute more effectively to the management of incidents. (Section 4 and appendices)
3. Pooling in real time of GPS-based information collected by freight operators about the location of their vehicles, to give information about traffic flows. (Section 5)
4. Delivering an improved journey-time predictor. (Section 6)
5. Ensuring that UTMC-based systems being set up by the various local authorities can share information with each other and with the Highways Agency. (Section 7)

2 Introduction

In June 2008 we issued a report¹ of pilot study we had led for the Department of Transport (DfT) which followed up some of the recommendations from the Science and Innovation Ministerial Committee's Data Grand Challenge². Following that, Professor Brian Collins, chief scientific adviser at the DfT, invited us to follow up the urging of Barry Moore of Mouchel that there be better coordination of local authority transport information systems, both with each other and with that of the Highways Agency.

We therefore began a wide range of discussions with representatives of local authorities both within and beyond our region, of the Highways Agency, the police, freight companies, port and airport operators, and satnav and GPS services. Knowingly or unknowingly, they have all contributed material to this report.

In the spring of 2009 Mike Salter, transport manager of the East of England Development Agency, suggested that we aim at a pilot study within the region and offered to fund a workshop. Brian Smith, who at that time headed both the County Surveyors Society and transport for Cambridgeshire County Council, agreed that such a pilot would be valuable and suggested that the lessons learnt might subsequently be deployed nationally through the County Surveyors Society.

The workshop took place in July 2009 and brought together some 50 people. They were enthusiastic about working together and so we then met with Brian Smith and with Gwyn Drake, then regional director of the Highways Agency. Gwyn Drake offered to provide some modest funding to continue the work and a steering group was set up, consisting of Peter Grimm (Suffolk County Council), Mark Kemp (Cambridgeshire County Council), Alan Kirkdale (Highways Agency), Mike Salter, and Liz Saville (Essex County Council).

Three working groups were set up, to discuss:

1. Automatic exchange of information between local authorities and the Highways Agency (led by Mark Kemp, Cambridgeshire)
2. Handling planned events, such as road works or football matches (led by Peter Grimm, Suffolk)
3. The effect on nearby towns of incidents on a nearby Highways Agency road (led by Liz Saville, Essex)

¹ <http://www.dft.gov.uk/pgr/scienceresearch/technology/natii/>

² <http://www.dft.gov.uk/pgr/scienceresearch/datagrandchallenge>

Topics under discussion have included:

- The needs of freight operators to predict journey times at selected future dates and times, taking account of planned events such as road works and including "the last 5 miles" on local-authority networks.
- Analysing the whole process for handling unplanned incidents, from deciding who takes the lead, depending on the nature of the incident and when it occurs, to taking into account other planned or unplanned incidents occurring at about the same time and deciding what information about the state of the transport system is needed.
- Better sharing of equipment, facilities such as control centres, technology and information.

Other collaborations between local authorities and the Highways Agency have mostly been quite localised and driven by the Highways Agency. This project is led by local authorities and is region-wide, with the potential later to be rolled out nationally.

3 Transport information

A central problem, both for the managers of the road system and for its users, is that a great deal of information is available but it is difficult to know what is there, and to access it. Some examples:

- The database ELGIN contains good information about present and future road works, but its use is said to be spasmodic. There is no similar database covering other planned events.
- The Regional Control Centre does not reliably get information about unplanned events, even when the police are on the scene and certainly when they are not, for example when there is a burst water pipe.
- The Regional Control Centre now has a GIS map display system but, for the present at least, it does not allow them to overlay information about agreed diversion routes. For these, they have to refer to on-paper manuals, even though these will have been prepared electronically.
- Different organisations gather information about the state of the road system and tend to keep it for their own use. It would be to everybody's advantage to pool it, for use by all in both real time and archive. Examples are data from induction loops (SCOOT, MIDAS etc), GPS on buses and trucks, ANPR, CCTV and phone calls from drivers.
- A major road haulier told us that he had not known about the Traffic England web site until we told him, and many are unaware of the Transport Direct journey time predictor.

We recommend that there be a study of the creation of a common web-based means to access all available information relevant to the road system. Experience with information technology is that systems should be built up gradually; it is too difficult to install an all-embracing system in one go and make it work well. Among the features that would be needed are

- allow automatic input of data, for example by SMS text
- contain links to every conceivable source of data, password-protected only where absolutely necessary
- include a guide to allow users initially to engage at a simple level with facilities that are particularly useful, becoming more ambitious as they gain experience

There are problems with having too much information. The challenge is to filter out just what one wants, particularly in times of panic.

A key and very difficult problem is assessing the reliability of the information. The only viable solution is as far as possible to tap independent sources for the same piece of information and compare them.

4 Incidents

A workshop on 27 May 2010 concluded that:

- There is a need to achieve a more efficient flow of information between all those involved in handling an incident
- There must be more sharing of resources
- Responsibilities need clarifying
- The aim must be to support business by making journeys more reliable
- Drivers need good-quality prediction, continually updated, of how long will be needed to clear the road
- The person at the site needs to concentrate on handling the immediate consequences of the

incident. Someone else should be responsible for managing the consequences.

- Phone calls are not good enough to relay information, as there may not be anyone who has time to make them and maybe nobody to receive them. Information must therefore be converted into data that can be transmitted automatically to all who might make use of it. Each authority can then use its own process for handling and using the information.
- HGV fleet and taxi operators get information from their drivers reporting in, and from being tracked through the GPS they carry. It would be valuable if that information could be shared and coordinated with that coming from police, HA traffic officers, MACs and others. At present, no standards are in place for floating-vehicle data.
- Decisions about diversion need improving:
 - diversion routes often have insufficient capacity
 - wide areas may be affected
 - information about conditions on non-HA roads is limited
- The problem with information tends to be that there is too much. The challenge is to alert the right person to what they need to know. Useful delivery channels include radio, satnav, emails and texts, though on the journey only radio and satnav can be received. A problem with radio is separating purely local information from more strategic, and its reports are not always accurate..
- Wider community ownership should be promoted, to give a better understanding of what we are trying to do. As there is now no money to improve the road network, we have to manage it better.
- There needs to be an information hub not just for each HA area, but also for each LA transport authority.

The workshop agreed to get a better understanding of the processes adopted by the police and by the HA, and to explore the possibility of fleet operators pooling the real-time data they gather. We were charged with talking with the Highways Agency and with the police to learn about their incident-handling processes. We therefore had meetings with Mike Wherrett and with Ian Jobson of the Highways Agency, and with CI Richard Phillibrown and CI John Walker of Essex Police. We also participated in a cold debrief for two serious incidents that occurred in June on the A12.

The lessons we have learnt are detailed in Appendix 1. They include

- there need to be mechanisms to check whether a particular route is appropriate at a particular time, in the light of road works or anything else that may be limiting its capacity at the time; the phasing of lights along diversion routes needs study
- drivers need to be given much prompter and more complete information about incidents and the likely clear-up time; this needs continual updating
- methods other than telephone need putting in place to keep all those informed who need to be -- police, the RCC, the local authorities etc; ideally, the information should be turned into data and transmitted automatically, and filtered by users so that they only receive what they need to know and are not swamped with information
- contact with local authorities are a particular problem; there needs to be a system to transmit data to them automatically and they must ensure that there is always an informed person who is readily contactable when difficulties occur -- consideration should be given to setting up joint control centres
- the information on signs needs serious attention: better coordination, better updating
- telling people what is happening makes them think things are better than when they are not told. But the information must be accurate, up-to-date and relevant. People who come in every day on the same route at peak times expect congestion; what annoys them is when things are different from normal.

5 Pooling of GPS data

The workshop on 27 May 2010 agreed also to explore with freight operators whether they would be willing to pool their information about the locations of their vehicles for it to be used more widely, so as to give information about incidents on both Highways Agency and Local Authority roads. A workshop on 13 July 2010 to follow this up **concluded** that

- It would be valuable to set up a common access point for all information relevant to the road system, both archived and real-time. This should be the responsibility of either the DfT or the HA, though it might be unrealistic to suppose this can be achieved.
- At the same time we should assume this is not possible and discuss with a cross-industry group the business case for it to be done commercially.
- The FTA will campaign to get operators to hand over their data.
- We need to work out how to export data from operators and hold them in a database.
- We need a road map of appropriate technologies that make use of the information, particularly

journey-time prediction tools, and where they are heading, to see how to put them together and get value.

- Cleansing the data, to make them accurate, is the biggest challenge.

A further workshop on these matters has been arranged for 23 September.

6 Journey prediction

Some freight operators have told us that assuming an average speed of 40 mph in practice gives them good prediction of journey times unless something goes wrong. What they mainly need is more prompt notification of incidents on the roads, so that they can try to take avoiding action. However, other operators are pressing for better predictive tools, to help them plan ahead. For example Sucklings delivers petrol from oil terminals to garages (they have 5% of the market) and plans next day's schedule and a back-of-the-envelope calculation indicated possible savings of £500k per year if the predictions were made more reliable.

The DfT's Transport Direct is probably the best available predictive tool for road journeys (as well as for public transport), though it is not clear that most people are aware of this. With one of our working groups, Chris Francis of freight operator Turners and Nigel Allsopp, who heads the Highways Agency's Regional Intelligence Unit, compared Transport Direct's predictions for journeys along the A14 from Felixstowe to Newmarket during one week in June 2010 with Turner's actual experience. The agreement was excellent, though this happened to be a week in which there were no problems along the A14.

For parts of journeys along Highways Agency's roads, Transport Direct's predictor uses records of past experience according to the day of the week and the time of day. For the rest of the road network it has to rely on the national transport model, with less good results. In either case, information is not included about

- road works
- planned events
- school holidays
- unplanned incidents.

It seems likely that the best route to achieving a better predictor is to build on what Transport Direct already has, though alternatives should be considered. These include systems run by satnav operators or by GPS providers.

7 Local authority transport information systems

Our project's initial stated aim was better coordination of local authority transport information systems, both with each other and with that of the Highways Agency. Some of the problems that have become apparent in our study are

- Of the local authorities in the region only Essex has a control centre, and Cambridgeshire is just initiating one.
- The Highways Agency finds difficulty making contact with transport managers in local authorities in cases of emergency (even with Essex when its control centre is closed).
- There has been a lack of common standards for data, though this is improving. Local authorities are moving towards UTMC-based systems, though we have been told that consultants tend deliberately to build in quirks when they supply UTMC systems for authorities. The Highways Agency uses EU-driven DATEX2, but is now working to make this compatible with UTMC. UTMC is owned by the LAs, but the DfT has transferred funding for its development to the HA. The aim is the convergence of ITS initiatives, to bring them all under the control of one person in the HA. UTMC is being heavily promoted in Europe.
- Often the first information that a motorway has been closed comes from the media, or from the appearance of heavy traffic in a town centre. The information available to local authorities about traffic flows on their roads is limited. It comes mainly from
 - SCOOT loops at traffic signals, though their availability is patchy and so far little use is made of this information. (Loops get confused when speeds decrease and/or volumes increase.)
 - GPS on buses, though again little use is made so far of this information and some authorities still have to sort out who actually owns it
 - ANPRs at present give the best data on traffic – collaborations are beginning with police to install and run these, though the effect of the recent government decision to curtail support is uncertain
 - CCTV – a powerful method, but so far it is manpower-intensive and automatic image-analysis techniques need developing

Two authorities are making major investment in their UTMC-based information systems together with the Highways Agency, Kent and West Midlands. It is not sensible for other authorities to re-invent the wheel and so the question arises of how the expertise these two authorities are developing can be deployed more widely. The systems being developed for them have among their features:

- They can communicate with the UTMC system from anywhere via the web. Limited access is given to highways staff, maintenance crews, councils, car park and public transport operators
- UTMC links everything imaginable and they can add value to data and pass them on to others, both real-time to help operation and archived to analyse performance.
- A joint control centre is particularly valuable when things go wrong. Such a centre for the West Midlands is expected to be operational next year. With a control desk for each of the 6 LAs, located within the RCC, it will cost about £100k p.a. in sub-let rent plus the initial fit-out costs. An aim is to try to get the LAs to be proactive rather than reactive. A decision-support tool is being developed, using real data to devise strategies. In practice there is very little time to react, and inappropriate action causes disruption to last longer. The centre will give controllability right across the network from each desk.
- CCTV is important. The aim is to be able to control any camera from anywhere. They have access to HA cameras, and have semi-mobile cameras on lamp posts.
- Road works information from ELGIN is made available on the web. A permit scheme for road works helps keep track of them.
- A Cutlas system gives real-time public transport information, controlled through the UTMC system, but it can display other messages too.
- Information about bus location helps coordinate bus priority.

The most valuable intervention is controlling signals. We understand that Reading uses dynamic information about nearby HA roads. They have identified the data that are key, perhaps just from a few detectors. The information triggers various strategies to change signal timings. It has removed the need for police to be involved, though at present it requires human decision; software to do it automatically is likely to be available soon. (Liverpool is already more sophisticated.)

A difficult question is to identify the economic or commercial value. Investments are for long-term benefit; it is not clear what are the benefits year on year. Justifying expenditure is difficult, and often it comes from a budget belonging to someone other than the receiver of the benefits. It is also difficult to judge the success of a system once it is in place, without turning it off so as to highlight its effect. Jacobs are developing a model, to justify future capital investment.

Linked to this question is the reliance of local authorities on consultants. While it has an obvious advantage of spreading expertise, there should be a re-analysis of the cost implications and whether it might be more effective for groups of authorities to join together and employ their own in-house expertise and run joint systems.

Appendix 1: Management of major incidents

A workshop was held on the 27th May 2010 to understand better the issues and impacts surrounding the management of major incidents, particularly where they have cross-boundary impacts. The model below was used to interrogate processes and expose communication and management weaknesses.

Incidents have a wide range of possible causes, amongst them are:

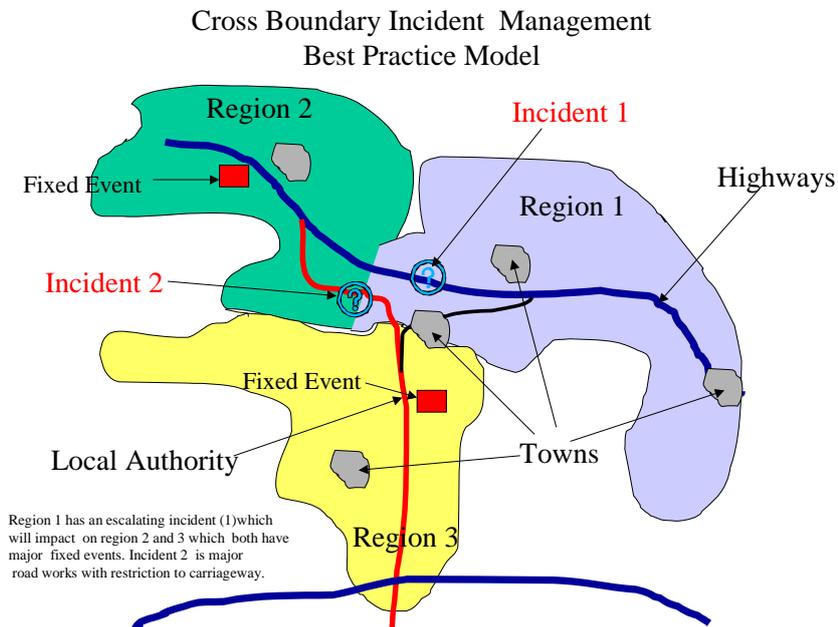
- accidents
- hitting a structure or debris,
- breakdowns on or near the carriageway,
- animals and people wandering or persons attempting suicide,
- flooding, for example due to a burst water main.

A long delay can have a knock-on effect for UK business, lasting several days, so there are direct and indirect economic consequences of a major incident. The aim must be to support business by making journeys more reliable

In most cases incidents are first detected by the general public or commercial road users and not someone not in authority. Generally, if traffic is queuing without any known cause, contact is made with the police or

perhaps the local radio station.

The workshops have raised a significant number of issues that provide a guide to the strengths and weaknesses of the current approach and the importance of making strategic and tactical improvements, even with the current public sector constraints.



A summary of the workshop findings and suggested actions is provided below, while appendix 2 records interviews with the Highways Agency and Essex Police.

General questions that arise in incident management include:

- Who takes overall control?
- Are there management plans in place?
- Who is in charge of the information flow in each region?
- How do you get appropriate experts on scene more quickly?
- Does the diversion route decision-maker have up-to-date information on planned events and road works in the region?
- How far away are warning signs needed to try to prevent vehicles from going near the incident?
- Are diversion routes clear, as road users tend to worry about getting lost if diverted.
- Do organisers of planned events need to be sent information?

It needs to be recognised that there are two prime management tasks after securing the incident area by the police and HA traffic officers:

- 1) **The person at the site** of the incident needs to concentrate on handling the **immediate consequences of the incident**.
- 2) **Someone else** needs to be responsible for managing the **consequences of the incident**.

The problem with information tends to be that there is too much. The challenge is to alert the right person to what they need to know. Useful delivery channels include radio, satnav, emails and texts, though on the journey only radio and satnav can be received. A problem with radio is separating purely local information from more strategic.

Ideally road users need prompt and accurate information about an incident:

- unambiguous location, in terms of data that are immediately recognisable
- informed and continually updated judgment of the severity and potential delay

Command and Control

The main authorities are Highways Agency, the police and the local authorities. The following are observations and concerns arising from discussions, interviews and workshops:

- Current command and control systems in each other's organisations are not clearly understood.
- There is a need to establish a common understanding of the resources and constraints of other authorities
- There are no common procedures and training across authorities
- Local authorities at present have little or no roles in managing incidents.
- Local authorities could perhaps contribute more if they all had access to control centres
- There is poor out-of-hours support from local authorities
- A better understanding is needed of what drivers decide to do when they are given advance information of problems.
- Decisions about diversion routing need improving:
 - Diversion routes often have insufficient capacity
 - Wide areas may be affected
 - Information about conditions on non-Highways Agency roads is limited
 - Diverting traffic might simply create another problem
 - A previously agreed route may not be suitable on the day.
 - It may be that the right decision is not to divert, but sit it out.
- Investment in improvement schemes such as remotely controlled lights on diversion routes could significantly improve incident management

Communications

- There is need to improve the promptness of communication during an incident, with continual updates both to those who are managing it and to road users
- Drivers need good-quality prediction, which is continually updated.
- Information about the severity of an incident may not be reliable.
- Confusing and all-too-often out-of-date VMS urgently need attention.
- Contradictory information is often provided by different services (radio, VMS, mobile phone companies etc)
- Methods should be put in place to achieve and disseminate better prediction of delays

Management of Information

- There is a need for better communications between the Highways Agency and local authorities
- There is a need for better information on whom to contact in local authorities out of normal working hours
- There is a need to set in place a better process to learn from past incidents
- Wider community engagement should be promoted to give better understanding of the problems with the road system
- There is a lack of shared data across authorities on maintenance work and events
- Keeping data accurate and up to date is the biggest challenge.
- There should be an accurate and complete database of critical assets (water pipes, valves) that could disrupt primary routes if they fail.

Appendix 2: Notes of interviews about incident management

Meeting with Mike Wherrett (Highways Agency) 30.6.10

Peter Landshoff and John Patman

The HA's process for handling incidents is summarised in an Aide Memoire on <http://www.highways.gov.uk/business/25464.aspx>

An incident on a motorway is coordinated by the Regional Control Centre (RCC), but the scene of the incident on the road will be initially managed by the police until they have completed any investigations and are prepared to release the scene for clear up. The RCC passes information to the National Traffic Control

Centre which, if the incident is severe, sets strategic messages signs some way away so as to give drivers the chance to avoid the incident using other routes.

Initial information may come from a member of the public, the HA's Traffic Officer (TO) service, cameras viewed from the RCC, or the police. There is discussion of instituting a direct link between RCCs and police control centres, so as to speed up the process. When more than one RCC needs to be involved, they communicate by telephone.

The actions taken may include

- getting a TO to the incident
- calling in emergency services
- setting warning signs
- bringing in the Managing Agent Contractor (MAC) to close junctions

When the police have left the scene, the rest is up to the TOs and the MACs.

Trunk roads are handled similarly, though in most cases they are not patrolled by TOs and the police take the lead. TOs may be called in to give extra help and coordinate with the MAC (which cleans up the carriageway and repairs any damage, as well as initially organising the road closure). The police keep the RCC informed, but deal directly with the MAC.

Diversion routes onto LA roads are being developed. There is discussion of how to check whether a particular route is appropriate at a particular time, in the light of road works or anything else that may be limiting its capacity at the time.

Incidents are fully logged at the RCC and debriefing takes place when things did not go as planned. The HA is aiming to produce a manual on the use of Off Network Diversion Routes for all routes.

Meeting with CI Richard Phillibrown and CI John Walker (Essex police) 1.7.10

Peter Landshoff and John Patman

When an incident occurs, whether it be a crash, a breakdown, or whatever, the police control room takes information from the public, and from professionals such as taxi drivers. The control room is linked to the county's traffic centre, the RCC and the emergency services. Contact with neighbouring police forces is by phone; a more joined-up police capability is being developed. Each area has its own IT system and compatibility is an issue. The RCC has the capability to view the Essex police IT system. There have been problems about confidentiality of the police information, though most HA TOs have similar security clearance to the police. A police liaison officer at the RCC supports joining up of radio channels and helps with translating police jargon.

It is the police who decide that a road should be closed, but they may delegate doing it. Roads may also be closed by the HA.

Previously-agreed diversion routes may not be able to cope. With better information, there could be a decision to extend the closure and spread the traffic more. A gap in the process is monitoring the network to see the effect of a diversion. This is a dynamic environment with changes in traffic volumes constantly fluctuating. Communication to motorists is essential and various forms of media and signalling are currently used, with varied success dependent on the surrounding road network and media services. Several LAs might need to be involved. It might help to divide the responsibilities of handling the incident and its consequences. This is done to some extent on motorways, but on LA roads it would help to involve an LA officer. Also, some incidents do not need to be led by the police.

The effects of an incident over a wider area than at present should be considered. Who should be responsible for that?

An LA is not allowed to have its own TOs, though Kent seems to get round this somehow. TOs do not have blue-light capacity; maybe they should, but at present the police may have to help them get to the scene.

There are sensitivities about allowing a freight operator onto the scene while an investigation is under way. Although the police may talk to the company, it is unlikely that they would allow an operator to visit a crash scene.

There is a hot de-brief for every major incident, but there is no archive of past incidents and maybe there

should be more reviews. There is learning from experience, but personnel keep changing. The de-briefs are internal, only occasionally together with the HA or LA.

When an incident occurs, experts from the police survey the scene and do a forensic reconstruction. This may take some time. Experience guides when to decide to summon experts, such as bridge engineers, to help with the clear-up. It is possible that there is scope to save time by escorting them to the scene if there is significant congestion.

It is accepted that there is a need to issue better information to drivers who are delayed. It is often difficult to judge how long the clear-up will take, but information should be given to help people understand what is being done and why the delays are taking longer than they would expect. Information on signs is too often out of date.

Meeting with Ian Jobson (HA) 12.7.10

Peter Landshoff

It is difficult to make contact with LAs when incidents occur, particularly out of hours and if there are several phone numbers from which to choose. A single point of contact would be a great improvement. There is often a need to talk to the LA about using a diversion route, setting its signs, or re-phasing signals. There must be someone with an overview of what is happening. The HA does now have some information about planned events, road works and incidents on diversion routes. It can phone the TfL or the Essex control room for updates, but with other LAs it is difficult, even in the day time. The worst problems are with utilities, which have power to take action independently, for example when there is a gas leak or a burst water main. It would be ideal to create joint control centres for Norfolk/Suffolk and for Herts/Beds/Cambs, though it is important to provide access to local knowledge. There is space in the RCC. Collocation helps to build up trust and rapport, even if communication needs to be by phone to ensure it is logged. One of the MACs is managed from the RCC; it would be an advantage if the others had a presence there too – maybe they could save by agreeing to set up a consortium whereby they took it in turns for one manager to oversee them all.

HA journey-time targets for individual road sectors are being replaced with whole-journey times. Nigel Allsopp is putting in place a system to work out which is the best data source, eg TrafficMaster.

Insurance companies may obstruct the clearance of a truck involved in an incident. When there is a breakdown on the hard shoulder a couple of hours are allowed for the owner to arrange his own rescue. If this is not achieved the HA organises it and makes a corresponding charge. The HA has a connection to the FTA and so knows who to call. For live-lane incidents recovery is arranged immediately, unless the owner has made previous arrangements.

Although A12 Alliance police officers are well informed, normal police tend to be confused between HA and LA roads. It is mainly only the motorways that the HA patrols, for lack of resources, and only on those does the HA have power to close the road. On other roads the power is delegated from the Chief Constable to the inspector in charge of the police control room, at the request of the MAC or the police at the scene. If there is life-changing injury, the police take the lead. Otherwise the HA puts an incident commander on the ground, reporting to whomever is on duty at the RCC.

The junction immediately before an incident is closed first. If it is not a diversion route and it becomes apparent that the incident cannot be cleared quickly, the closure is taken back to a junction with a tactical diversion route (a system of LA roads). For more serious incidents closure is taken back to a strategic diversion route (a system of HA roads) and the NTCC may set signs beyond the region.

Everybody's first priority is safety. But for the police the second is getting good evidence, while for the HA it is keeping traffic flowing. The HA can and does question the time the police need to take, and this can lead to tension.

There can be problems escorting bridge engineers, coroners and other experts when the hard shoulder is blocked; the solution is to close the other carriageway. The HA has to obey normal road regulations, except that it is allowed to reverse on the hard shoulder. It is beginning to use a very loud air horn to help part the vehicles.

If an incident has learning points there is an immediate hot debrief at the end of the shift, with a report to the team manager at the RCC and then upwards to Ian Jobson. If many actions are indicated, there is a cold debrief later on, run from the regional HA HQ and involving also the police, the MACs, the fire brigade etc.

This is an expensive process, as everybody works on shift with different hours. There is also the option of a more informal warm debrief, involving only some of the stakeholders. Each month a meeting with all the MACs shares information about all the incidents among them. Ian meets Richard Phillibrown every two months to talk about things that have not been covered in the debriefs. Information is fed to the Traffic Learning Centre and may lead to procedure changes. LAs are involved with any problems with diversion routes, and Nigel Allsopp collects data on hotspots, for considering improvements to them.

LAs are diverse and involve a lot of different people -- councillors, road safety people etc -- who do not all sing from the same hymn sheet. There are problems with them sometimes circumventing the RCC; the gazetteer needs to be improved, to give better understanding of who is responsible for which road. Information that an incident has occurred is now sent automatically to the RCC from police control rooms. Only need-to-know details are allowed to be sent; sometimes too much is sent. A civilian police liaison officer at the RCC has access to all the police systems and suitably filters information. Ian's view is that closer cooperation between the HA and the police could be valuable, eg for catching criminals.

The phasing of lights along diversion routes needs study, as is being done in the Surrey Integrated Demand Management project, and more effective use of VMS. There should be information boards at all the P+Rs.

The RCC has a GIS system, but it does not yet display information about diversion routes: the operator has to consult information about these from thick paper files. Information about burst water mains etc is completely lacking, and during the hard winter conditions the LAs did not send in any information. There is a need to set up a system where those concerned type in the information and it is sent and used automatically.

The HA and LA VMS signs are on different systems and the information on the signs is very poorly managed. Not only is it all too often inaccurate or out of date; drivers become irritated if they are told there is a 50 mph limit when they can only crawl at 20 mph.