

Determining current health and safety practices, awareness of HSE initiatives and economic trends in relation to isocyanate paint use in the motor vehicle repair sector

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Determining current health and safety practices, awareness of HSE initiatives and economic trends in relation to isocyanate paint use in the motor vehicle repair sector

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This report contains the main results of research carried out for the Health and Safety Executive (HSE), by the Institute for Employment Studies examining health and safety practices and procedures in relation to the use of isocyanate-based paints in the motor vehicle repair (MVR) sector. The main objective of this research was to determine current health and safety practices in the motor vehicle repair sector in relation to the use of isocyanate paint spray, focusing in particular on the use of masks and the use of spray booths. The intention was to gather data about practice, in order to gain a view of the overall state of play in relation to the health and safety practices that determine isocyanate use in the sector. The intention was that this will, in turn, make it possible and viable for the HSE to develop a baseline for targeting future embedding activity.

The report is based on a telephone survey of 500 motor vehicle repair bodyshops and visits to 30 bodyshops, during which face-to-face interviews were carried out with bodyshop managers and sprayers.

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EXECUTIVE SUMMARY

This report contains the main results of research carried out for the Health and Safety Executive (HSE), by the Institute for Employment Studies examining health and safety practices and procedures in relation to the use of isocyanate-based paints in the motor vehicle repair (MVR) sector. The main objective of this research was to determine current health and safety practices in the motor vehicle repair sector in relation to the use of isocyanate paint spray. The intention was to gather data about practice, in order to gain a view of the overall state of play in relation to the health and safety practices that determine isocyanate use in the sector. The intention was that this will, in turn, make it possible and viable for the HSE to develop a baseline for targeting future embedding activity.

The research was carried out between June 2009 and April 2010 and comprised:

- desk research, to inform the study as a whole
- interviews with industry stakeholders and questions asked to an HSE Field Operations Directorate staff focus group
- a telephone survey of 500 bodyshops, and
- 30 bodyshop visits, carried out by IES researchers and technical experts.

HEALTH AND SAFETY PRACTICES

The following main points emerge from the research:

- The majority of the bodyshops in this research had a spray booth, although around one-fifth of those responding to the telephone survey said that they had a spray room.
- Testing and maintenance of booths was usually carried out by external contractors/advisors on a regular basis, which bodyshops trusted to carry out the necessary checks.
- There was widespread awareness of booth clearance times among the bodyshop managers visited. There seemed to be lower general awareness of clearance times from the telephone survey responses, but this may be because the bodyshop managers did not have the figures to hand when responding to the survey.
- Although there was no reported difficulty around respecting the clearance times from the bodyshop visits, this was highlighted as a problem by a significant number of smaller bodyshops in the telephone survey.
- There was still evidence of lack of knowledge around the dangers of invisible spray mist – some sprayers believed that it was safe to enter the booth if they could no longer see the spray mist.
- The majority of sprayers wore full-face air-fed masks, although some of the older sprayers wore half-face masks. There were some problems with visibility with the full-face masks, but the sprayers who wore them liked the full-face protection that they gave. Those who wore half-face masks liked the visibility, but did not like the fact that their face was more exposed to the paint.
- When asked whether they would use safer but more expensive finishes in preference to isocyanate-cured coatings, most managers said that they would, but only if they could

pass the cost on to the customer, or if the manufacturer or insurance company agreed to this and paid for it. Cost and the constraints of the manufacturer or insurance company were most frequently cited as barriers to alternative coatings.

HEALTH AND SAFETY PROCEDURES

The research found that health and safety procedures varied according to organisation size. Larger bodyshops tended to be more structured in their approach to health and safety training, offering courses and information and advice on a regular basis to their sprayers. In the smaller bodyshops, the health and safety instruction was more informal.

Other issues emerging from this part of the research were:

- Many sprayers were candid in admitting that they often lifted their visors to check whether the finish was of the required standard. The managers and the sprayers knew that this was not advisable in terms of health and safety, but the sprayers were keen to ensure that the job had been done correctly – a re-spray caused by poor finishing would cost time and money.
- The practice of working on a bonus system was widespread among the bodyshops visited meaning that there was pressure on sprayers to work quickly. This was a popular arrangement, however, as it allowed sprayers to supplement their earnings.
- There was some anecdotal evidence (rather than the actual practice of the sprayers interviewed) that some sprayers work for themselves in the evenings and at weekends. This has implications for the health and safety of the sprayer, if the proper procedures are not in place, but also for the employer, if the sprayer becomes sensitised and tries to claim compensation from the employer.
- Work for insurance companies and dealerships was widespread and this type of arrangement appears to drive compliance with health and safety. Around half of the telephone survey respondents thought that insurance work put sprayers under more pressure than other types of work, although the sprayers interviewed did not have strong views on this.

HEALTH SURVEILLANCE

Bodyshop managers tended to contract out their health surveillance to external providers, trusting the judgement of these providers regarding what tests were needed and/or advisable for health reasons. However, advice from external contractors/advisors on urine testing given to bodyshops seemed to be uneven particularly in relation to whether urine testing was advisable. Possibly as a result of this, regular urine testing was less common than other health tests. Larger employers were more likely than smaller employers to offer a range of health tests to their employees. All bodyshops visited kept records of health surveillance tests if they were carried out. However, knowledge about how long it was appropriate to keep the records was mixed.

PERCEPTION OF RISK

The majority of managers felt that their sprayers were aware of the dangers of isocyanates and knew which safety procedures should be put into place and followed when using the paints. There was some confusion about what the health risks posed by isocyanate paints, with some managers concerned that the main risks were from getting paint on the skin rather

than breathing in paint fumes. Sprayers were more likely to recognise the risks to respiratory health, but some were still more concerned about skin contact.

USE OF HSE INFORMATION, ADVICE AND GUIDANCE

Managers at just over half of the bodyshops visited said that they were aware of HSE advice and guidance for the MVR sector, and half of these managers said that they were aware of the HSE's MVR website. Feedback on the usefulness of HSE produced information was generally positive.

More detailed findings were that:

- Bodyshop managers tend to gather information on a need-to-know basis as they feel under time pressures.
- Sprayers tended to be less aware of HSE advice and guidance, and often viewed health and safety practices and procedures as common sense.
- Larger organisations were more likely to have attended a Safety and Health Awareness Day (SHAD) than smaller organisations. Those who had attended could in general remember it very well and spoke very highly of it.
- From the telephone survey, the most frequently cited reason for not attending the SHAD was being too busy.
- Managers tended to rely on a range of non-HSE sources for their health and safety information. These included trade magazines, paint company representatives, and networks within the industry. Paint company representatives were frequently cited as the most valuable sources of information.

CONCLUSIONS

The main conclusions of this research are:

- Sprayers often lift their visors after spraying in order to check the finish. This is a problem that is common to all sizes of business in the sector, not just small businesses. The HSE might want to consider how to address this, as it presents a threat to good health and safety practices when using full-face masks. Areas to explore might include the use of half-face masks, whether the visibility of full-face masks can be improved, or whether booth lighting can be improved in order to increase visibility.
- There is continuing evidence of misconceptions about the main risks of working with isocyanate paints. Some bodyshop managers and sprayers still believe that the paints can cause cancer or that they can cause asthma through entering the pores of the skin. The HSE might want to focus further on targeting the eradication of those myths during future information campaigns.
- From this limited research, which brought us into contact with a limited number of small bodyshops that do not have good health and safety procedures in place, it was clear that this was due to a lack of information and knowledge rather than a wilful attempt to skimp on health and safety. More targeting of information and advice to very small companies might improve the situation.
- Bodyshops tend to rely on external contractors/advisors to carry out technical testing and health surveillance. They rarely question what these external contractors do, trusting them to do everything to ensure that they comply with the law. It might be worth targeting

information at these external contractors in order to ensure that they are offering correct advice and guidance to bodyshops.

The SHADs that the HSE held in the MVR sector were well-received. This appears to be an effective way of communicating health and safety issues to the sector. Overall, there appears to be a willingness to comply with health and safety regulations and implement good practice and procedures around the use of isocyanate paints. The overwhelming impression was that people want to be told what to do, and will then go and do it.

1 INTRODUCTION

In March 2009, the HSE issued an invitation to tender to conduct research determining current health and safety practices, awareness of HSE initiatives and economic trends in relation to isocyanate paint use in the motor vehicle repair sector. The main objective of this research was to determine current health and safety practices in the motor vehicle repair sector in relation to the use of isocyanate paint spray. The intention was to gather data about practice, in order to gain a view of the overall state of play in relation to the health and safety practices that determine isocyanate use in the sector. The intention was that this will, in turn, make it possible and viable for the HSE to develop a baseline for targeting future embedding activity.

In detail, the research was to entail the following elements.

- An 'audit' of current health and safety practices relating to the use of isocyanates in this sector, which was to include:
 - identifying health and safety practice in the UK motor vehicle repair industry in relation to isocyanate paint use by sprayers
 - identifying factors that contribute to difference in the nature of health and safety practise amongst vehicle paint sprayers in different sub-sectors of the UK motor vehicle repair industry
 - developing a 'baseline' on 'where we are now' to enable the HSE to direct future embedding activities and stakeholder engagement effectively.
- Establishment of the level of awareness of relevant HSE initiatives in this sector, which was to include:
 - assessing the level of penetration achieved by HSE initiatives in the UK motor vehicle repair industry
 - identifying factors that contribute to difference in the level of penetration within the sub sectors of the UK motor vehicle repair industry
 - identifying 'gaps' in the penetration of HSE key messages on risk, exposure and control within the Motor Vehicle Repair Sector.
- Investigation of the economic trends within the sector to inform future initiatives, which was to include:
 - identifying current economic position of the sector
 - projection of the expectation within the sector of the future economic situation
 - identifying possible future developments within the sector that would impact upon economic trends, eg emerging technological developments.

The Institute for Employment Studies (IES) was awarded the contract to carry out this work. The contract ran from 29 June 2009 to 30 April 2010. This report contains the main findings from this research.

2 METHODOLOGY

This research was carried out between June 2009 and April 2010. It was made up of a number of distinct phases, as follows:

- Desk research, to inform the study as a whole.
- Interviews with industry stakeholders and questions asked to an HSE Field Operations Directorate staff focus group.
- A telephone survey of 500 bodyshops.
- A total of 30 bodyshop visits, carried out by IES researchers and technical experts.

2.1 DESK RESEARCH

In order to investigate the economic, health and workforce trends within the sector to inform future initiatives, we carried out desk research of available academic and other literature.

In order to inform this desk research, we conducted a literature review of articles relating to the risks associated with isocyanate paints. For a full bibliography of this literature, see Chapter 11, consulted relevant websites, such as those of organisations conducting research in the motor vehicle industry, and accessed the Labour Force Survey. Given that isocyanates appear in the broader literature and the more specific health and safety literature under many different names, a systematic review approach was not adopted for the literature review. The two main bibliographic sources were Pubmed and Google Scholar. The strategy was to work backwards from known items of literature and identify material referenced there. Then once the new historical references were identified then a citation analysis using Google Scholar was used to identify other parallel material. This approach was used in an iterative manner until only material that was already known was being identified.

2.2 STAKEHOLDER INTERVIEWS

Telephone interviews were carried out in autumn 2009 with a representative of the Scottish Motor Trade Association and a representative of the trade union Unite who has responsibility for the motor vehicle sector. Their views were sought on issues such as trends in the industry, overall health and safety issues for paint sprayers, levels of awareness of the dangers of isocyanates, the prevalence and effectiveness of health and safety training, bodyshop practices around health and safety and the main barriers to good practice, awareness levels of HSE guidance in this area, and opinions on any other main issues and future trends. The aim of these interviews was to provide an overall background to the research and a framework for the research design.

A series of questions relevant to this research was also included in a focus group of HSE Field Operations Directorate staff in the motor vehicle repair sector, carried out in October 2009. These questions related to issues such as:

- dutyholder awareness of health and safety issues
- dutyholder compliance
- issues related to enforcement in the sector
- training, guidance and support

- effectiveness of HSE interventions
- barriers to sustained change.

2.3 TELEPHONE SURVEY

A telephone survey of 500 bodyshops was carried out by Ipsos MORI, under contract to IES.

2.3.1 Scope of the survey

In total, Ipsos MORI interviewed 502 respondents from UK motor vehicle repair business establishments, between 26 October and 9 November 2009. Interviews were conducted using Computer-Aided Telephone Interviewing (CATI), using a sample provided from the Experian Business Database.

The aim of the survey was to establish a baseline assessment of health and safety practices in the motor vehicle repair sector, and identify factors that lead to differences in practices. A further aim was to assess the penetration of current HSE initiatives within the sector.

2.3.2 Sample design

The overall target was to achieve 500 interviews with business establishments in the UK. The survey focussed on business *establishments* rather than enterprises – that is, it targeted particular business sites rather than companies as wholes. An establishment-based sample was more appropriate for this survey since the primary focus of the survey was on practice in bodyshops rather than corporate policy. Target quotas were set for each size band of establishment, and for country within the UK.

2.3.3 Sample frame

The target population was all motor vehicle repair bodyshops that use isocyanate paints. However, there is no definitive sample frame for this type of establishment, and so the sample was drawn from the Experian Business Database, which includes the details of businesses in the ‘Car Body Repairs’, ‘Car Painters and Sprayers’, and ‘Motorcycle Repairs and Services’ industrial sectors. The sample was screened in the questionnaire to filter out those establishments that did not use isocyanate paints.

2.3.4 Drawing the sample

The Experian Business Database contains 7,269 records of businesses in the ‘Car Body Repairs’, ‘Car Painters and Sprayers’, and ‘Motorcycle Repairs and Services’ industrial sectors, and from this Ipsos MORI drew a sample of 3,000, of which 100 were used for the pilot, and 2,900 for the main survey (a sample ratio of 5.8:1). The sample was stratified by establishment size (in numbers of employees), as follows in Table 2.1.

The sample was drawn by stratifying the population into these size bands, and then within each band, ordering by country and then establishment size, before randomly selecting members of the sample from this list.

Table 2.1

| Size bands | Number required |
|-------------------|------------------------|
| A | 1 to 2: 1,200 |
| B | 3 to 6: 600 |
| C | 7 to 14: 600 |
| D | 15 plus: 600 |
| Total | 3,000 |

2.3.5 Quotas

Separate quotas for interviews were set by establishment size (in numbers of employees), and country of operation. In the absence of accurate data on the profile of the target population, quotas were set based loosely on the data we had for businesses in the relevant industrial sectors in the Experian Business Database. Quotas were then adjusted to ensure a minimum of 100 interviews with establishments employing 7-14 and 15 plus people respectively. The quotas set, and the population information from the Experian database, are shown in the table below:

Table 2.2: Population information and quotas for the telephone survey

| Size bands | Proportion in Experian population % | Proportion in quotas % | Quotas set |
|-----------------------------|--|-----------------------------------|-------------------|
| 1 to 2 | 52 | 40 | 200 |
| 3 to 6 | 31 | 20 | 100 |
| 7 to 14 | 8 | 20 | 100 |
| 15 plus | 9 | 20 | 100 |
| Total | 100 | 100 | 500 |
| Country of operation | | | |
| England | 86 | 87 | 400 |
| Scotland | 6 | 4 | 30 |
| Wales | 5 | 4 | 20 |
| Northern Ireland | 3 | 2 | 10 |
| | 100 | 100 (of 460) | 460 |

Whilst data on the size of the establishments was available from the sample, progress against the size quota was monitored by number of employees as stated during the questionnaire, to ensure that any disparities between the information on the sample and the actual nature of the establishments did not cause the final sample to be unrepresentative.

This was important as there was considerable difference for some businesses between the number of employees stated on the sample, and the number actually reported. Twenty-one per cent of the businesses had a disparity of more than five employees between the sample and the real figure.

2.3.6 Questionnaire design

The questionnaire was designed with input from the HSE's technical experts, as well as from IES and Ipsos MORI. The full questionnaire is included in Appendix 2. It covered the following areas:

- Screening on type of paint application, type of paint used, and responsibility of the respondent.
- Classification by number of employees and sprayers, type and quantity of vehicles sprayed, work for insurance companies, requirement for local government permits, and types of spray areas.
- Details of the spray areas, in terms of filters, clearance time and safety instructions.
- Respiratory equipment used.
- Agreement with statements on safety in using isocyanate paints.
- Health checks provided.
- Sources of information on health and safety topics.

The questionnaire ran to an average length of 15 minutes and 30 seconds.

2.3.7 Pilot

A small-scale pilot survey was conducted prior to the main fieldwork. The main aim of the pilot was to test respondents' comprehension of the questions, and to test the code-frames included in the questionnaire. The pilot also offered an opportunity to check the quality of the sample and the length of the questionnaire.

The pilot consisted of 20 interviews. As a result of issues raised by the interviews, several minor changes to questions were made, to make the questionnaire clearer and more smoothly-running. More detailed explanations were added to a number of questions.

2.3.8 Fieldwork

Telephone interviewing was conducted by Ipsos MORI Telephone Surveys, who are members of the Interviewer Quality Control Scheme (IQCS), recognised by the Market Research Society. Fieldwork was conducted between 26 October and 9 November 2009. The same telephone call-centre was used for both the pilot and main fieldwork, ensuring that the interviewers and supervisor were familiar with the subject of the questionnaire before the start of the main fieldwork. In addition, the interviewers were thoroughly briefed by members of the Ipsos MORI project team. This included explanation of some of the more technical aspects of the questionnaire, and pictures of respiratory equipment used, and the HSE posters described towards the end of the survey. In accordance with IQCS, field supervisors listened in to at least ten per cent of the interviews and checked data entry on screen.

In order to maximise the response rate, a letter was posted to the full sample on 20 October 2009, six days before the start of the main fieldwork. This period was deemed sufficient to allow leeway for the intermittent Royal Mail postal strikes that were occurring at the time. The letter included details of Ipsos MORI, IES and HSE, stated the topic and length of the

questionnaire, and emphasised the confidentiality of any information provided during the survey. Following this letter, only five establishments opted out of the survey.

2.3.9 Response rates

As this is a quota survey, it is not possible to calculate a response rate in the same way as it would be for a random probability sample. Instead, detailed breakdown of the sample supplied is presented in the table below.

Overall, 17.4 per cent of the sample issued resulted in an interview and, considering the sample where only a definite outcome is known, ie where actual contact had been made with an eligible respondent/organisation, the adjusted response rate was 39.2 per cent. For more details on the final sample status, see Appendix 1.

In terms of the banding of the sample size for the purposes of this analysis, we have used four bands as set out in the table below.

Table 2.3

| Company size (banded) | Achieved sample |
|------------------------------|------------------------|
| Sole trader | 121 |
| 2-5 employees | 164 |
| 6-14 employees | 116 |
| 15+ employees | 100 |
| Total | 501 |

2.3.10 Recontact

Permission was obtained at the end of the questionnaire for IES to recontact the respondent, in order to conduct further research in the form of site visits. An incentive of £50 in vouchers was offered for participation in this further research. The full wording of the recontact question can be found in Q35 of the questionnaire, in Appendix 2.

2.4 THE BODYSHOP VISITS

Potential participants in research visits were identified from two sources, namely:

- The organisations that had, following the telephone survey, agreed to be recontacted.
- A pool of bodyshops visited without appointment by the technical experts who worked with IES on this project: Peter Barlow, Ian Holmes and Dr Albert Rooms.

Our aim was to visit 30 bodyshops and to select our sample using criteria such as:

- geographical location
- size
- number of employees
- level of practices and procedures.

We were conscious of the fact that the bodyshops that would be most willing to talk to us would be the larger ones that, on the whole, would be more likely to have good practices and procedures in place than some of the very small operations, the so-called 'Fred's in sheds'. In order to try to find as wide a range of practice and circumstances as possible therefore, we tried to capture some of the smaller operations by using the technical experts to approach bodyshops directly. The technical experts were given a letter from IES that vouched for the fact that they were genuinely on a research visit on behalf of the HSE. All bodyshops were offered an incentive in the form of £50 in shopping vouchers to take part in the research. In addition, all respondents were informed that all visits and data would be confidential.

This approach proved to be successful and a sample of 30 bodyshops was achieved relatively easily. In terms of geographical split, 12 visits were carried out in the north, seven in the midlands and 11 in the south.

In terms of size of bodyshops, a range across the sector was achieved, although it should be remembered that the vast majority of businesses in this sector are micro- or small companies. Three bodyshops had one employee who was the owner, a further five had 2-5 workers, eight were in the 6-10 category, seven in the 11-20 category, four had 21-30 workers, two had 31-35 workers, and one larger organisation, which had 80 employees.

In terms of the numbers of sprayers, five only had one sprayer, eight had two sprayers, eight had three sprayers, four had four sprayers, three had five sprayers, one had six sprayers and one had eight sprayers (although this organisation was in the 31-35 employee category, and was not the very largest organisation in the sample).

The sample breakdown is set out in Appendix 1.

The visits were carried out between December 2009 and March 2010. A total of 20 were short visits of around an hour, involving a technical expert only, who went through a pro-forma of questions with the bodyshop manager and then carried out a brief visual appraisal of the bodyshop. Sprayers were briefly interviewed if available, and asked about their views on PPE, health risks and health and safety procedures. The remaining ten visits were longer, taking around one and a half to two hours. They also involved, but in this case they were accompanied by an IES researcher. As with the shorter visits, the technical expert went through the above-mentioned pro-forma of questions with the bodyshop manager. The IES researcher then held a 20-minute interview with the bodyshop manager and a 20-minute interview with one or more paint sprayer. All interviews were recorded and transcribed. A brief visual appraisal of the bodyshop was also undertaken.

The discussion guides for the bodyshop manager and sprayer interviews and the pro-forma for the bodyshop manager can be found in Appendix 3.

3 CHARACTERISTICS AND TRENDS OF THE MOTOR VEHICLE REPAIR SECTOR AND ITS WORKFORCE

This chapter examines the main characteristics of the motor vehicle repair industry, including an analysis of Labour Force Survey data. It also identifies the main risks associated with the spraying of isocyanate paint and sets out the HSE's previous work to date in this area.

3.1 THE MOTOR VEHICLE REPAIR (MVR) INDUSTRY

According to the HSE, around 189,000 workers are employed in the motor vehicle repair industry in the UK. One major characteristic of the industry is that it is dominated by micro- and small businesses, with over half the workforce in the industry working in businesses that employ fewer than ten staff. Overall, based on discussions with industry experts, it is estimated that there are between 7,000 and 10,000 motor vehicle repair body shops in the UK, ranging from very small workshops to large companies.

The motor vehicle repair industry comprises three distinct sections:

- car repair
- truck repair
- bus repair.

The majority of body shop premises deal with car repairs, largely due to the fact that very large spray booths are needed for truck and bus repairs. Most of the bodyshops in our research sample therefore predominantly carried out car repairs. Typically, a bodyshop's business would consist of 95 per cent car repairs and five per cent repairs to light commercial vehicles, such as vans.

3.2 LABOUR FORCE SURVEY DATA

In order to obtain an overview of the workforce of the bodyshop repair sector, we carried out secondary analysis of the Labour Force Survey. This analysis allows a quantitative overview of the workforce of this sector, and serves to inform the rest of the study.

The Labour Force Survey (LFS) is a continuous household based sample survey which reports quarterly. The range of questions asked is designed to inform labour market policy and those used in the UK are consistent with the questions used by similar surveys across the European Union. The quarterly data is available for further analysis from the Office of National Statistics and the proceeding analyses are based on this publicly available data. As the quarterly data is based on a sample of households, the weighted results are subject to sampling error. This means that in practice data cells of less than 10,000 people from quarterly data are considered unreliable and are therefore suppressed in any published reports.

3.2.1 Defining paint sprayers in the LFS

Paint spraying as an occupation is defined using the Standard Occupational Classification 2000 as SOC 2000 5234. This is defined using the following statement:

'Vehicle spray painters use spray equipment to apply paint, cellulose and other protective or decorative materials to the bodywork of motor vehicles, railway coaches and aircraft.'

(ONS, 2001¹)

However, the focus of this study is paint sprayers in vehicle repair. This can be achieved by using the Standard Industrial Classification 1992 code 50.20 which covers vehicle repair:

'SIC 1992, 50.20 Maintenance and repair of motor vehicles.'

(ONS, 1996²)

Since mid-2008 the LFS has used the Standard Industrial Classification 2007 where the maintenance and repair of motor vehicles has been coded as 45.20 (ONS, 2009³).

This means that the following analysis covers paint sprayers in general and paint sprayers in vehicle repair.

3.2.2 Trends over time

The latest available LFS for the July to September quarter of 2009 indicates that approximately 20,000 people are employed as paint sprayers with about 12,000 of these employed in the vehicle repair sector.

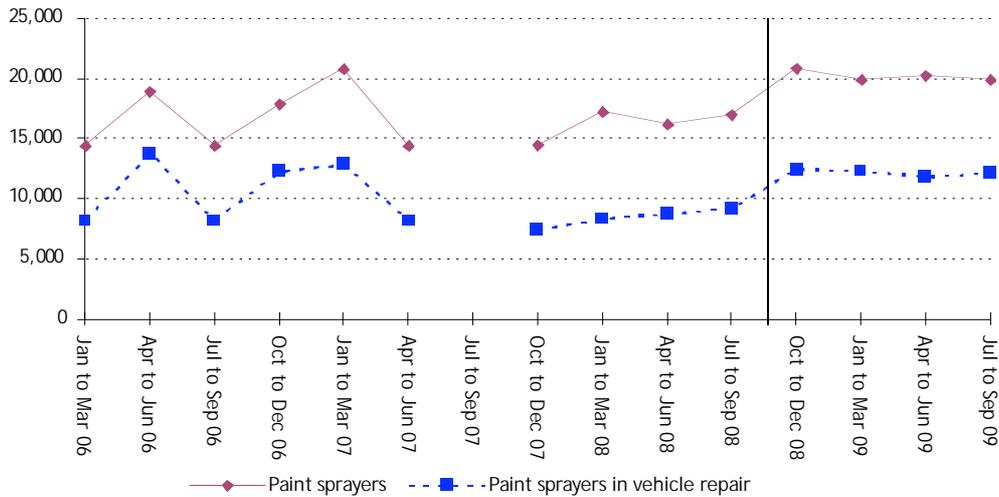
Figure 2.1 provides a time series of these numbers and shows a rather erratic pattern up to late 2008 after which numbers appear to have settled. The previous erratic numbers were largely driven by changes in the number of paint sprayers in vehicle repair. The earlier variation does not appear to be seasonal, although two of the three peaks were in the January to March quarters.

¹ ONS (2001), *Standard Occupational Classification 2000: Volume 1*, Office of National Statistics.

² ONS (1996), *The UK SIC 1992 Methodological Guide*, (ISBN 0-11-620817-1), Office of National Statistics.

³ ONS (2009), *UK Standard Industrial Classification of Economic Activities (SIC 2007): Structure and Explanatory notes*, Office of National Statistics.

Figure 3.1: Paint sprayers and vehicle repair paint sprayers over time



Source: Labour Force Surveys from January to March 2006 to July to September 2009

3.2.3 Educational attainment

Given the relatively small number of paint sprayers involved, the following analyses are based on a sample based on 12 quarters, or three years, of the LFS. This allows us to report sub-populations of more than 3,000. However, with a population of about 9,000 even this is limiting in terms of analysis. This means that in the following tables cells of less than 3,000 have been suppressed and replaced by - .

Table 3.1 examines the educational attainment of paint sprayers. This shows that just under 60 per cent of all paint sprayers are qualified at National Qualifications Framework (NQF) Levels 2 or 3. That is, those with more than five GCSEs at grade C and above through to having 'A' Levels or an NVQ level 3 qualification (BIS, 2009¹). The vast bulk of the others have qualifications at a lower level or have no formal qualifications. Vehicle repair paint sprayers are slightly more likely to be qualified at NQF Levels 2 and 3 and conversely slightly less likely not to have a qualification or be only qualified below Level 2.

¹ BIS (2009), *Using the Labour Force Survey to measure highest levels of qualification held within the working age population*, Department for Business, Innovation and Skills.

Table 3.1: Educational attainment of paint sprayers

| | Paint sprayers | | Vehicle repair paint sprayers | |
|----------------------------------|----------------|-------|-------------------------------|-------|
| | N | % | N | % |
| Other lower or no qualifications | 7,737 | 42.2 | 3,203 | 35.8 |
| NQF Levels 2 and 3 | 10,544 | 57.6 | 5,698 | 63.7 |
| NQF Levels 4 and above | -- | -- | -- | -- |
| Total | 18,320 | 100.0 | 8,940 | 100.0 |

Source: IES analysis of 12 quarters LFS from 2006 to 2009

3.2.4 Age structure

Table 3.2 shows that almost half (49.6 per cent) of all paint sprayers are over 40 years of age. By comparison about 35 per cent of vehicle repair paint sprayers are over 40. At the same time over 40 per cent of vehicle repair paint sprayers are under 30 years of age.

Table 3.2: Age structure of paint sprayers

| | Paint sprayer | | Vehicle repair paint sprayers | |
|---------|---------------|-------|-------------------------------|-------|
| | N | % | N | % |
| 16-29 | 5,250 | 28.7 | 3,584 | 40.1 |
| 30-39 | 3,991 | 21.8 | -- | -- |
| 40 plus | 9,079 | 49.6 | 3,144 | 35.2 |
| Total | 18,320 | 100.0 | 8,939 | 100.0 |

Source: IES analysis of 12 quarters LFS from 2006 to 2009

3.2.5 Training

Another question asked as part of the LFS is whether or not the individual has received work-related training in the last 13 weeks, or three months. Table 3.3 reports whether or not all paint sprayers or vehicle repair paint sprayers had received training. In practice, given the fact that cells of less than 3,000 have been suppressed, we can only tell if someone had not received job-related training. This shows that in practice both groups were roughly equally likely not to have received training: 88.4 per cent of paint sprayers and 87.3 per cent of vehicle repair paint sprayers had not received training over the past three months.

Table 3.3: Training in the last 13 weeks of paint sprayers

| | Paint sprayers | | Vehicle repair paint sprayers | |
|-------|----------------|-------|----------------------------------|-------|
| | N | % | N | % |
| Yes | -- | -- | -- | -- |
| No | 16,193 | 88.4 | 7,805 | 87.3 |
| Total | 18,321 | 100.0 | 8,940 | 100.0 |

Source: IES analysis of 12 quarters LFS from 2006 to 2009

3.3 SUMMARY

This chapter has examined the main characteristics of the motor vehicle repair sector and its workforce. The main characteristics are that

- The sector is dominated by micro- and small companies: over half the workforce in the industry work in businesses that employ fewer than ten staff.
- Approximately 12,000 sprayers are employed in the vehicle repair sector.
- Around 35 per cent of sprayers in the sector are over 40 years old and over 40 per cent are under 30 years old.
- Just under 60 per cent of all paint sprayers have more than five GCSEs at grade C and above, 'A' Levels or an NVQ level 3 qualification. The vast bulk of the remainder have qualifications at a lower level or have no formal qualifications.
- Sprayers were likely to have received no training in the previous three months.

4 THE RISKS OF ISOCYANATES

In this section, we look briefly at the academic literature on the risks of isocyanates and review HSE initiatives and campaigns to reduce the risk of isocyanate exposure in the motor vehicle repair sector.

4.1 THE HISTORY OF ISOCYANATE HAZARD RECOGNITION

Isocyanates, especially di-isocyanates, are widely used as a solvent in a range of industries and in the manufacture of polyurethane (Creely et al., 2006). However, there are a range of health hazards associated with their use (Hardy and Devine, 1979). Initially, the concern was due to the direct toxicity of isocyanates (Brugsch and Elkins, 1963). However, concern was soon expressed about the respiratory effects of isocyanates (Peters et al., 1968). More recently, the role of isocyanates as the leading cause of occupational asthma has been recognised (Cockcroft and Mink, 1979), although better controls since 1980 have led to a reduction in exposures and associated occupational asthma (Diller, 2002). However, given that the lifetime costs of occupational asthma are estimated to range from £94,000 to £138,000, the implications of the cost of poor control of isocyanates is significant (Boyd, 2006).

Other areas of health concern linked to isocyanates are Hypersensitivity Pneumonitis (Charles et al., 1976), Chronic Airways Obstruction (Glinmeyer et al., 2004) and Extrinsic Alveolitis (Vandenplas et al., 1993). A range of reviews of the health implications of isocyanate exposure have been undertaken. This includes one in the US for NIOSH (2004) and in the UK for the HSE (Cowie et al., 2005). These health risks have led to a series of control measures in a range of countries that includes the UK (Statutory Instrument, 2004), the US (EPA, 2002), Switzerland (Vu-Duc et al., 1997) and the European Union (Directive, 1999).

4.1.1 Specific issues in body repair shops

Despite the downward trend in exposures and associated occupational asthma (Diller, 2002), studies have shown that bodyshops are a major location for continuing exposures to isocyanates. For instance, a study in the West Midlands found that with occupational asthma:

'Specific occupational incidences varied from 1,833 (95% CI 511-2990) per million paint sprayers to eight per million clerks.'

(Gannon and Burge, 1993)

A particular issue facing the control of isocyanate exposure is that often body repair shops are small and are operated by relatively under-trained individuals. Small establishments have specific issues relating to health and safety issues (Eakin, 1992). Similarly, it is recognised that control of isocyanate risks are not simply a matter of providing physical controls or protective equipment. There exist a wide range of psychosocial and organisational factors to impact on control measures (Lunt and White, 2005).

One study concluded:

'The differences in workers who stayed at their shop compared to those who left, combined with the low asthma prevalence and high job turnover rate, all suggest that a healthy worker effect may exist in the auto body industry, and may in part

account for the low prevalence of asthma noted in SPRAY and other cross sectional studies of diisocyanate workers.'

(Redlich et al., 2002)

4.2 HSE ACTIONS AND GUIDANCE

As noted above, occupational asthma has been identified as a major cause of illness in the motor vehicle repair sector. Paints containing isocyanate are used extensively in the industry – isocyanates are found in most vehicle coatings, and even in some water-based paints.

Under the Control of Substances Hazardous to Health (COSHH) Regulations 2002 and the Health and Safety at Work Act 1974, employers and self-employed workers must assess the risks created by work that are likely to expose employees to respiratory sensitisers. These include the risks from the use of isocyanate in 2-pack paints. If there is a risk, employers must prevent or adequately control it.¹

Materials containing isocyanate have been the single biggest cause of occupational asthma in Great Britain for many years, and the workers who are at greatest risk are vehicle paint sprayers working in motor vehicle repair bodyshops. The HSE estimates that MVR paint sprayers have an 80 times higher risk of getting asthma compared with the UK working population. Every year, the HSE estimates that more than 50 sprayers are diagnosed with isocyanate asthma and most have to leave the industry.

The HSE has produced specific guidance and help to organisations on how to ensure that isocyanate exposure in spray booths and spray rooms is controlled. The HSE states that working with 2-pack paints can lead to allergic sensitisation to isocyanates and that once a person is sensitised, further exposure to even very small amounts of isocyanates can start an asthma attack.² The main risk in terms of occupational asthma is by breathing in isocyanate vapour or mist. However, the HSE also states that this risk is completely preventable, but requires:

- proper design, application and use of spray booths and rooms
- using air-fed breathing apparatus
- following correct working procedures.

One particular issue that threatens paint spray workers' health and safety is the fact that all paint spraying produces over-spray, most of which is invisible under normal lighting. It is this invisible mist that, when inhaled, causes occupational asthma. This spray can be made visible with special lighting. The danger is that as the spray cannot be seen with the naked eye, sprayers may think that the danger is over once the spraying has stopped, and remove their protective equipment. Therefore, it is vital that the clearance time of the booth or room – the time it takes for the fine spray to disappear – is known and is made known to all workers, who must continue to wear protective equipment following spraying, until that time is up. The HSE notes that:

¹ See *Breathe Freely. Respiratory sensitizers and COSHH. An employer's leaflet on preventing occupational asthma.* HSE. www.hse.gov.uk/pubns/indg95.pdf

² *Working with 2-pack isocyanate paints.* HSE. www.hse.gov.uk/pubns/indg388.pdf

*'Typically, a booth will clear in less than five minutes, but a room could take 20 minutes or longer.'*¹

Other risks include:

- Leaks from the spray booth or room. The HSE suggests that the best way to check that leakage is not happening is to combine a clearance smoke test with a leak test.
- The operational efficiency and maintenance of breathing equipment and spraying equipment.

The HSE's seven steps to safe working for sprayers are as follows:

- Remember that most airborne paint mist is invisible.
- All spray booths and rooms have a 'clearance time'. Workers need to know what it is.
- Always spray paint in a spray booth or spray room and not in the open workshop.
- Always make sure the booth runs under negative pressure so any air leakage is inward.
- Always wear air-fed breathing apparatus during paint spraying.
- Keep masks on during the clearance time (or leave the booth or room safety).
- Regularly check and maintain booths and air-fed breathing apparatus.²

The HSE has also produced specific guidance to employers in the MVR industry, as follows:

- Employers should measure the clearance time of spray booths or rooms using a smoke/fog generator, clearly mark it on the entrance door(s) and make sure everyone who uses the booth/room knows what to do. (It should also be noted that it is best to establish the clearance time just before the filters are changed, in order to establish the maximum clearance time, when the filters are in their least optimum state.)
- Make sure the booth or room runs at slight negative pressure so that it cannot leak fine mist during spraying.
- Make a list of simple daily and weekly checks to be done in the booth/room, appoint someone to do them, record the findings and act if things are wrong.
- Check exposure is properly controlled by arranging for the analysis of urine samples of vehicle paint sprayers.
- Arrange regular health surveillance for those potentially exposed to isocyanate paints such as sprayers.

In addition, the HSE has produced a range of guidance publications for employers and employees in this sector.¹

¹ *Controlling isocyanate exposure in spray booths and spray rooms. HSE 2008.*
www.hse.gov.uk/pubns/web36.pdf

² *Contained in: Controlling isocyanate exposure in spray booths and spray rooms. HSE 2008.*
www.hse.gov.uk/pubns/web36.pdf

Over the past six years, the HSE has undertaken a range of initiatives aimed at increasing awareness of the risks of isocyanate paints, and encouraging good health and safety practice in their use. For example, specialist Occupational Hygiene inspectors in HSE's Field Operations Directorate (FOD) set up a three year national intervention programme aimed at:

- improving the control of isocyanate exposure in Motor Vehicle Repair (MVR) by 2008, with a view to reducing the incidence of occupational asthma in this sector, and
- improving the design of equipment, instruction, training, maintenance and advice to the MVR sector concerning how isocyanates can be controlled.

Further, the HSE's National Project 27 aimed to reduce the risk of respiratory illness from 2-pack isocyanate-containing paints in the MVR industry. This contributed to the 'Fit 3' Strategic Programme and specifically the Disease Reduction Programme in relation to occupational asthma and skin disease. Several Safety and Health Awareness Days (SHADS) were held as part of the project and the feedback has been overwhelmingly positive. For example, in October to December 2004, the HSE conducted four pilot SHADS for motor vehicle paint sprayers in four regional locations in Great Britain (Cheshire, Bristol, Kilmarnock, Hitchin). The aim of these events was to raise the awareness of motor vehicle repair businesses of the hazards associated with the application of isocyanate paints and how the associated risks can be controlled. The Health and Safety Laboratory (HSL) evaluated the impact of these pilot events.² The aim of the evaluation was to assess the impact of the SHADS in enhancing participants' knowledge of the risks from isocyanate paints, understanding of how these risks can be controlled, and intention to act upon information provided by the event. Overall, a total of 240 individuals participated in the four SHADS, representing 172 different MVR organisations.

The overall findings from the evaluation of these SHADS indicate that they have increased levels of awareness of the hazards associated with sprayed isocyanate based paint application and related risk control measures amongst participating businesses. For example, 92 per cent (199) of participants stated that the event had improved their awareness of the health risks associated with 2-pack isocyanate paints. Further, after the event, participants reported decreased levels of confidence that their organisation met health and safety regulations on controlling exposure, indicating that the event had improved awareness of regulations, methods for effectively controlling exposure and highlighted weaknesses in participants' existing measures. The session on booths received the most favourable assessment and was identified by 43 per cent (92) of participants as the element of the event they found most useful. A key feature of this session was that the various demonstrations enabled participants to visualise their potential exposure to a normally invisible hazard (isocyanate).

Follow-up research was then carried out on organisations that had attended the Bristol SHAD to assess the impact of the SHAD on isocyanate exposure control measures.³ This

¹ These include: *Health surveillance for occupational asthma (G402)*, *COSHH essentials guidance sheets on the safe use of isocyanates in MVR*, and *Motor Vehicle Repair: good practice for SMART (small and medium area repair technique) sprayers (WEB33)*.

² *Evaluation of four pilot Safety & Health Awareness Days (SHADS) for motor vehicle paint sprayers HSL/2006/11*. www.hse.gov.uk/research/hsl_pdf/2006/hsl0611.pdf

³ *Evaluating the impact of the Pilot Bristol Safety & Health Awareness Day (SHAD) on motor vehicle repair bodyshops' control of health risks*. HSL/2006/16. www.hse.gov.uk/research/hsl_pdf/2006/hsl0616.pdf

research found that that exposure control measures had improved in over half of the organisations that attended the Bristol Pilot SHAD. For example, 97 per cent (35) of the 36 of the businesses assessed had either a suitably ventilated booth or spray room, and 94 per cent (34) had suitable air-fed Respiratory Protective Equipment (RPE). The main form of RPE was air-fed visors with a small number of companies using half masks. Further, 27 (75 per cent) of the owner/managers in the 36 MVR businesses knew that the booth/spray space had a clearance time and 13 businesses had assessed the clearance time of the booth/space with smoke. However, although 86 per cent (31) of the interviewees knew that isocyanate exposure could be measured by health surveillance, only 11 per cent (four) of the companies had actually assessed the effectiveness of isocyanate control measures using health monitoring.

Following these 2004 SHADs, 16 were held in 2005/2006 and a further 12 in 2006/2007, covering the following issues:

- How isocyanates may affect health.
- How exposure occurs.
- How control measures can minimise exposure.
- Checking that control measures are working by measuring exposure (using health monitoring).
- The risk of dermatitis to body-preparation workers and sprayers and how to control it.
- What respiratory and skin health surveillance needs to be in place and who should do it.

The SHADs also aimed to try to dispel some common myths around isocyanates, such as the belief that they cause cancer, that the main entry route into the body is through the skin or that it can enter through the thin skin around the eyes. The HSE felt that it was very important to counter these beliefs, as this detracts from the main danger related to isocyanates, which is that they are a major cause of occupational asthma through inhalation of the fine mist created through spraying.

The HSE has also carried out its own research on the behaviour of isocyanate paint spray mist during spraying in spray rooms. This research is documented in a research report published in 2006.¹ The stated aim of this research was to investigate exposure, spread and escape of isocyanate-in-air during simulated 2-pack isocyanate paint spraying in spray rooms commonly used in small motor vehicle repair (MVR) operations. This research found that high isocyanate levels arise in spray rooms during spraying and that the airborne isocyanates take a significant time to clear (20+ minutes) to clear these spray rooms.

The HSE has also commissioned research to assess the suitability of commercially available party fog machines for determining the clearance times of paint spray booths and rooms, such as used in Motor Vehicle Repair and some commercial spraying premises, which enable clearance times to be established accurately and reliably.² In this research, seven different fog machines were tested for assessing the clearance times of spray booths and

¹ *Isocyanate exposure, emission and control in small motor vehicle repair premises using spray rooms: Phase 1.* John White, Matthew Coldwell, Tim Davies, Julie Helps, Mark Piney, Duncan Rimmer, John Saunders & Derrick Wake. HSL 2006. HSE RR496: www.hse.gov.uk/research/rrpdf/rr496.pdf

² *Review of commercially available party fog machines suitable for determining the clearance time of paint spray booths and rooms.* HSL/2006/43. www.hse.gov.uk/research/hsl_pdf/2006/hsl0643.pdf

rooms, the results were compared to the Colt 4 smoke generator currently used by both HSE inspectors and HSL.

The Colt 4 Turbo machine was found to be superior in performance to the cheaper units tested in the study; it produced the most smoke in a given time; produced the thickest smoke; and was capable of smoke production when disconnected from the mains. However, performance came at a price. At over ten times the cost of the cheaper units, the study notes that it would be impractical to expect small MVR bodyshops to purchase a professional smoke machine, such as the Colt in order to determine clearance times of its spray booths or rooms.

Other HSE research includes a study examining the development of an automated device to alert sprayers of isocyanate-based paints of the presence of spray mist inside paint spray booths/rooms used in the MVR and other industries.¹ This research recommends that ideally, this type of spray clearance indicator should be integrated into all new spray booths/rooms and retrofitted to existing booths/rooms.

The HSE has also commissioned research to find out whether the mixing and brush and roller application of isocyanate paints poses a problem to the health of those who work with these paints.² This research detected no airborne isocyanate during mixing and brush and roller application of isocyanates.

Another potential area of exposure is during the sanding and bake cycle. Research commissioned by the HSE and published in 2005³ suggested that the baking and sanding processes are not a significant source of isocyanate exposure in the workplace, although it recommended further work in this area.

The HSE has also produced a range of information posters and leaflets, aimed at providing advice and guidance on working with isocyanates. These include two posters designed for the 2004 SHADs⁴, a 2009 information poster⁵ and a 2010 information poster⁶.

4.3 CHAPTER SUMMARY

This chapter has examined the academic literature on the risks of isocyanates and reviewed HSE initiatives and campaigns to reduce the risk of isocyanate exposure in the motor vehicle repair sector.

Although a range of health surveillance strategies aimed at picking up the early effects of isocyanates are now in place, following recognition of the dangers of isocyanates, motor

¹ *An automated system for indicating spray clearance times of MVR spray booths and rooms. A Thorpe and C J Saunders. HSL 2009. HSE RR742: www.hse.gov.uk/research/rrpdf/rr742.pdf*

² *Measured Airborne Isocyanate from Mixing and Brush and Roller Application of Isocyanate based 2-pack Paints. Results - February 2005. Matthew Coldwell and John White. HSL/2005/60. www.hse.gov.uk/research/hsl_pdf/2005/hsl0560.pdf*

³ *Measurement of Airborne Isocyanate during Sanding and Bake Cycle. Results – December 2004 and March 2005. Matthew Coldwell and John White. www.hse.gov.uk/research/hsl_pdf/2005/hsl0559.pdf HSL/2005/59*

⁴ *'What an aerosol!. Don't flip up until the air is clear!' and 'Which mask would you prefer? 2-k paints can take your breath away!'*

⁵ *'Breathing isocyanate paint mist causes asthma.'*

⁶ *'Isocyanate paints can take your breath away.'*

vehicle repair bodyshops are seen as a major location for continuing exposure to isocyanates. In particular, the small size of the majority of bodyshops in the sector and relatively low levels of health and safety information and training in smaller establishments makes it more difficult to put into place adequate protection against isocyanate exposure.

The HSE has, for some years, been engaged in a range of activities and initiatives designed to increase awareness of the risks associated with isocyanates and to encourage good health and safety practices and procedures.

The main threats to paint spray workers' health and safety are:

- Is the fact that all paint spraying produces over-spray, most of which is invisible under normal lighting. It is this invisible mist that sprayers and others inhale which causes occupational asthma.
- Leaks in spray booths or room leaks. The HSE suggests that the best way to check that leakage is not happening is to combine a clearance smoke test with a leak test.
- Deficiencies in the operational efficiency and maintenance of breathing equipment and spraying equipment.

The HSE has issued a range of guidance to employers and to sprayers, detailing how to work safely with isocyanate paints:

- A three-year national intervention programme aimed at improving the control of isocyanate exposure in the sector by 2008.

The HSE's National Project 27 aimed to reduce the risk of respiratory illness from 2-pack isocyanate-containing paints in the sector. Several Safety and Health Awareness Days (SHADS) were held as part of the project. One key aim of the SHADS was to try to dispel some common myths around isocyanates.

5 HEALTH AND SAFETY PRACTICE

This chapter examines working practices, using data gathered from a telephone survey and visits to bodyshops. It then goes on to look at specific health and safety practices in relation to tools and equipment, such as spray booths, guns, paints and masks.

5.1 WORKING PRACTICES

Table 5.1 reports data from the telephone survey of 500 bodyshop managers, showing that the majority of sprayers are employed by their company rather than working on a self-employed basis. Small companies were more likely to report that all staff were self-employed (32 per cent only used self-employed staff). Conversely, the vast majority of the larger companies only used employed staff.

Almost all the companies (95 per cent) tended to use *either* employed or self-employed staff, and did not mix and match.

Table 5.1: Employment arrangements by employer size

| Company size | Sole trader % | Small (2-5 employees) % | Medium (6-14 employees) % | Large (15+ employees) % | All companies % |
|--|---------------|-------------------------|---------------------------|-------------------------|-----------------|
| All staff employed | N/A | 58 | 96 | 98 | 80 |
| All staff self-employed | N/A | 32 | 3 | 1 | 15 |
| Mix of self-employed and employed staff | N/A | 10 | 1 | 1 | 5 |
| <i>No. of responses on which percentages are based (N)</i> | <i>N/A</i> | <i>164</i> | <i>116</i> | <i>100</i> | <i>380</i> |
| <i>Not applicable (N)</i> | <i>121</i> | <i>-</i> | <i>-</i> | <i>-</i> | <i>-</i> |
| <i>Total (N)</i> | <i>121</i> | <i>164</i> | <i>116</i> | <i>100</i> | <i>501</i> |

Source: IES/MORI survey of bodyshops 2010

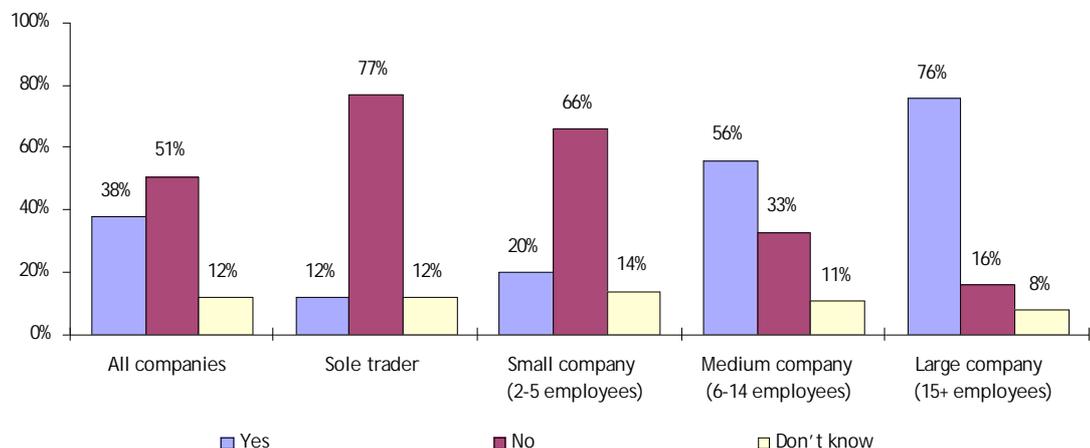
In terms of the types of work undertaken, from the telephone survey, the majority of managers in companies of all sizes reported that their main work was spraying passenger cars (over 97 per cent). Larger companies (six+ employees) were more likely to spray vans, while small companies (up to five employees) were more likely to spray motorbikes. They were all equally (un)likely to spray large vehicles such as buses and coaches, and vehicles over 7.5 tonnes (around three to four per cent reported undertaking this kind of work, regardless of company size), usually due to the size of the spray booth required.

When bodyshop managers were asked in the telephone survey whether they needed a permit from the local authority to operate, 56 per cent of the companies with 6-14 employees and 76 per cent of the companies with 15 or more employees claimed to need one, compared with 20 per cent of companies with 2-5 employees and 12 per cent of sole traders.

Interestingly, overall, around 12 per cent of companies did not know whether they needed the permit, with little variation by company size, though smaller companies were slightly

more likely to say they did not know. It is probable that the sole traders and companies with two to five employees did not understand the question, as they would be unlikely to use that much solvent. For details, see Figure 5.1 below.

Figure 5.1: Whether bodyshop requires a permit from the local authority (to operate under Secretary of State’s guidance PG6/34a or b) by employer size



Base is all employers (121 sole traders, 164 companies with 2-5 employees, 116 companies with 6-14 employees, 100 companies with 15 or more employees).

Source: IES/MORI survey of bodyshops 2010

5.2 SPRAY BOOTHS, INCLUDING CLEARANCE TIMES, AIR FLOW, MAINTENANCE

Table 5.2 sets out details of the spray facilities of the organisations in the telephone survey, based on data from the telephone survey. The majority of bodyshops (87 per cent) said that they had a spray booth, although 22 per cent said that they had a spray room and four per cent had another spray space. Almost all of the large bodyshops had a spray booth (99 per cent). Spray rooms were more common in sole traders (34 per cent) than large companies (14 per cent).

Table 5.2: Type of spray facilities by employer size

| | Sole trader % | Small (2-5 employees) % | Medium (6-14 employees) % | Large (15+ employees) % | All companies % |
|-------------------------------|---------------|-------------------------|---------------------------|-------------------------|-----------------|
| Spray booth | 65 | 89 | 99 | 99 | 87 |
| Spray room | 34 | 24 | 14 | 14 | 22 |
| Other spray space | 6 | 4 | 1 | 5 | 4 |
| No. on which %s are based (N) | 121 | 164 | 116 | 100 | 501 |

Note: Respondents were free to give as many responses as applied to them, therefore the percentages will not sum to 100.

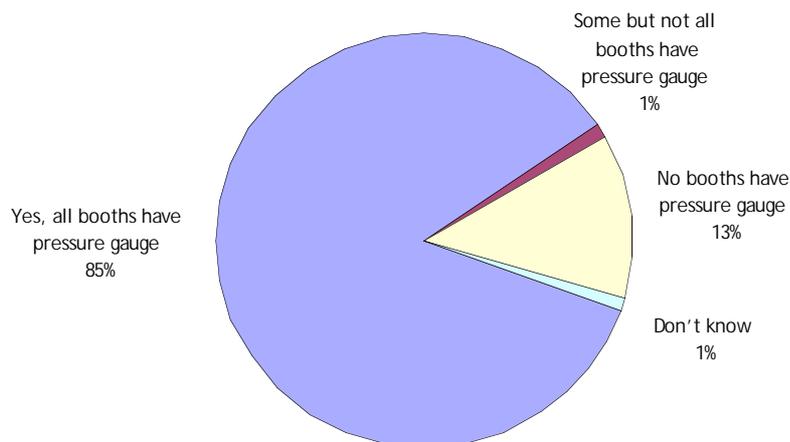
Source: IES/MORI survey of bodyshops 2010

5.2.1 Air flow

Telephone survey

From the telephone survey, those with spray booths were asked whether there was a pressure gauge to indicate whether the booth was under negative pressure, thus allowing air to be extracted efficiently. Eighty-five per cent said that there was, although 13 per cent said that there was not. Figure 5.2 gives details of whether there is a pressure gauge in spray booths, based on the telephone survey responses.

Figure 5.2: Whether spray booth has a pressure gauge



Base is all employers with a spraybooth (438 employers).

Source: IES/MORI survey of bodyshops 2010

Overall, 99.5 per cent of respondents reported that the air was extracted from all of their spray booths.

Bodyshop visits

The vast majority of bodyshops visited also had spray booths – in all but one of the bodyshops visited – and they operated at negative pressure. Some bodyshop managers noted that the wind sometimes interfered with this. Air flow in the booths was regulated by floor and ceiling filters and controllable vents. Typically, air would flow into the booth through ceiling vents/filters, and flow out of the booth through the floor vents/filters. The exception to this was one home-built booth, in which the air flow was horizontally across the booth. One very small bodyshop (consisting of an owner/manager only) had a spray space curtained off from the rest of the workshop and which was ventilated by means of a fan at knee height on the end wall of the spray space. The fan had never been examined or maintained.

Managers were asked where the air intakes of the air compressors were located, to check for possible contamination of the air supply to the air-fed masks and to the booth. None of the bodyshops visited thought that they had a problem with potential contamination and this was confirmed by visual examination during the visit. Managers were also asked whether they had had a compressor fire. None had.

Booths in all the bodyshop visits, with the exception of the home-made booth, were equipped with gauges to measure the room pressure, in order to monitor whether the booth was working correctly. This did not apply to the spray space.

Not all booths were fitted with an over-pressure shut-down facility. The newer booths tended to be, the older ones not. Where there was an overpressure alarm, the alarm was usually a warning light.

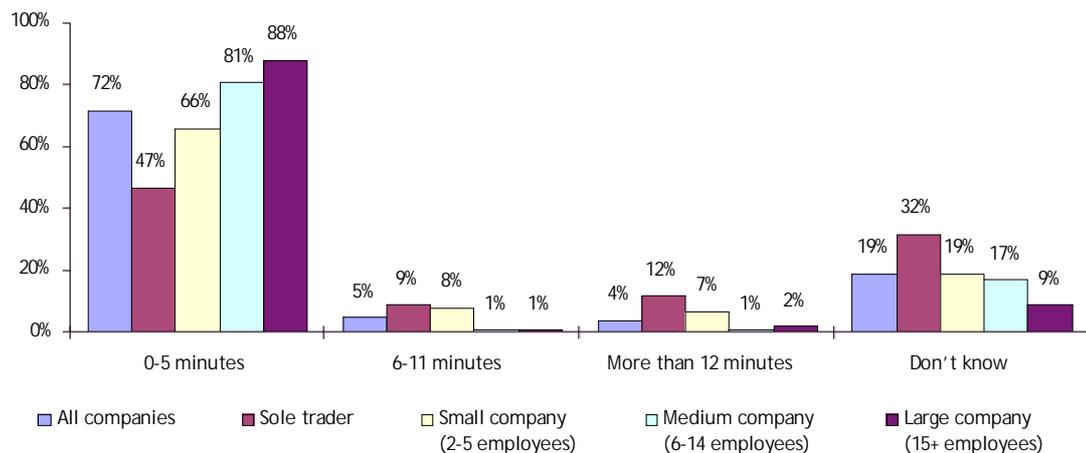
5.2.2 Clearance times

Clearance times in spray booths and rooms vary according to the size of the booth, its age and its make. As long as the clearance time is established, marked up for sprayers to see, and respected, there should be no danger to health and safety.

Telephone survey

Most bodyshop managers in the telephone survey reported that clearance times were five minutes or below. Very few (four per cent) claimed that their booth clearance time was above 12 minutes. Overall, the smaller the company, the less likely the manager was to know what their clearance time was. Almost 32 per cent of sole traders were unaware of the clearance time for their booth, compared with nine per cent of the largest companies. Figure 5.3 gives the reported average clearance times for spray booths, based on responses from the telephone survey.

Figure 5.3: Reported average clearance times for spray booths by employer size



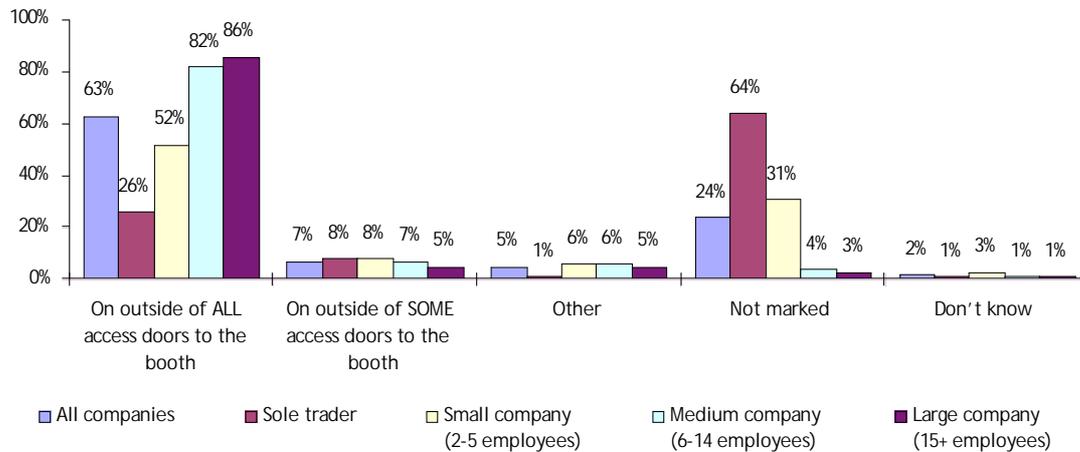
Base is all employers with spray booths (78 sole traders, 146 small, 115 medium and 99 large employers).

Source: IES/MORI survey of bodyshops 2010

Figure 5.4 shows where the clearance time is marked, based on telephone survey responses. Of those with spray booths, most had the time marked on all or some of the access doors to the booth. A few reported that the clearance times were marked in other places, for example elsewhere on the booth, in the manual or in the instruction book. Around a quarter did not have the clearance time marked anywhere.

The larger the organisation, the more likely they were to have the clearance time marked. Sixty-four per cent of sole traders *did not* have the clearance time marked, compared with only three per cent of organisations with 15 or more employees.

Figure 5.4: Where clearance times are marked



Base is all employers with spray booths (78 sole traders, 146 small, 115 medium and 99 large employers).

Source: IES/MORI survey of bodyshops 2010

From the telephone survey, a significant number of smaller organisations reported finding it harder to respect spray booth clearance times; 34-35 per cent agreed with the statement ‘During busy periods, it can be difficult to respect spray booth clearance times’ compared with 13 per cent of companies with 15 or more employees. This conflicts, however, with what managers from the bodyshop visits told us (see the next section, below).

Bodyshop visits

From the bodyshop visits, we found that booth clearance times were, in the vast majority of cases, established and marked on the outside of booths, in accordance with HSE guidance. Of the 30 bodyshops visited, only two had not marked the clearance time. One was going to do so following the visit and the other was not aware of the clearance time (this was a home-built booth). The clearance times ranged from 1 minute 15 seconds to around 3 minutes, depending on size, make and age of booth (the clearance time in the home-built booth, although not formally established, would be longer than this). All managers and sprayers interviewed in the bodyshop visits were aware of the concept of clearance times and knew that it was marked up on the booth. The majority of them knew by heart what the clearance times were. There appears to be a discrepancy between the findings of the telephone survey, in which 19 per cent of managers were unaware of the clearance time of their booth. However, it may be that they were aware that there was a clearance time, but could not say what it was immediately in answer to the question. This was sometimes the case in the bodyshop visits, where managers could not think what the clearance time was off the top of their heads, but knew that it had been established.

Managers were asked whether it was difficult to respect the booth clearance times. None of them highlighted this as a problem at all, pointing to the fact that the clearance times were only a few minutes, and that sprayers often took a little extra time as a quick break at that point in any case. There were no issues concerning potential bottlenecks with cars waiting to enter the spray booth. Sprayers often said that they waited until the end of the bake cycle before entering the booth.

One exception to this was a small bodyshop where there were two joint owners in partnership. This bodyshop had a home-built spray booth and the clearance time had not been established. The manager interviewed was asked what the procedure was following spraying, and demonstrated a lack of knowledge about the nature of the spray mist:

‘Has the spray booth clearance time been established?’

‘No, but we always run the fan until it’s safe – around 20 minutes.’

‘How do you know it’s safe?’

‘You can see whether the spray mist has cleared.’

(Bodyshop manager (2-5 employees))

One of the sprayers interviewed, at a different bodyshop, also maintained that the spray mist could be seen.

‘The isocyanate spray is very fine. You can’t see it?’

‘You can see it. You see clouds of it. It’s a fine mist like hairspray.’

(Manager/sprayer (bodyshop with 2-5 employees))

5.2.3 Maintenance of spray booths

Telephone survey

Table 5.3 sets out data from the telephone survey relating to the testing of spraybooths. The survey found that testing was extremely variable by company size: overall, 60 per cent of organisations had had their ventilation systems tested within the past six months. However, only one-third (33 per cent) of sole traders and 48 per cent of companies with 2-5 employees had done so, compared with 77 per cent and 79 per cent of organisations with 6-14 and 15 or more employees respectively.

A sizeable number of sole traders (17 per cent) had never had their booth tested. This compares with a figure of five per cent or less for all other company sizes.

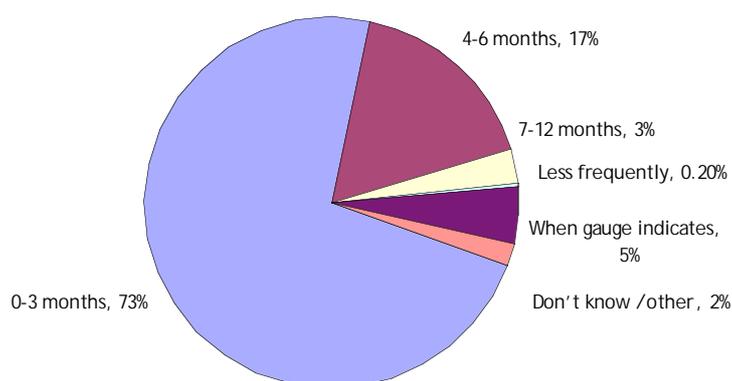
Table 5.3: When ventilation in the spray booth was last thoroughly tested

| | Sole trader % | Small (2-5 employees) % | Medium (6-14 employees) % | Large (15+ employees) % | All companies % |
|--------------------------------------|---------------|-------------------------|---------------------------|-------------------------|-----------------|
| Within a month | 13 | 16 | 19 | 38 | 21 |
| 1-3 months | 10 | 10 | 29 | 23 | 18 |
| 3-6 months | 10 | 22 | 29 | 17 | 21 |
| 6-12 months | 24 | 30 | 18 | 16 | 23 |
| 12-14 months | 5 | 6 | - | - | 3 |
| More than 14 months | 10 | 6 | 1 | 1 | 4 |
| Never | 17 | 5 | - | 1 | 5 |
| Don't know | 11 | 5 | 4 | 4 | 5 |
| <i>No on which %s are based (N)</i> | 78 | 146 | 115 | 99 | 438 |
| <i>Do not have a spray booth (N)</i> | 43 | 18 | 1 | 1 | 63 |
| <i>Total (N)</i> | 121 | 164 | 116 | 100 | 501 |

Source: IES/MORI survey of bodyshops 2010

Ninety per cent of organisations changed the filters in their spray booths within six months. There is a small variation by company size with smaller organisations likely to change their filters less often (82 per cent sole traders change their filters every 0-6 months while the figure for organisations with 2-5 employees is 88 per cent, and for organisations with 6-14 and more than 15 employees over 90 per cent). Details are given in Figure 5.5 below.

Figure 5.5: How regularly filter changes are made



Base is all employers with a spraybooth (438 employers).

Source: IES/MORI survey of bodyshops 2010

Bodyshop visits

The spray booths in the 30 bodyshops visited had usually been examined within the past 14 months, although this was not the case with a couple of the smaller bodyshops. They were also usually fitted with an overpressure shutdown facility or alarm, although one booth had not been checked for three years.

The majority of the bodyshops visited used a contractor to carry out maintenance checks on their spray booths. They often could not say exactly what these contractors did, trusting the contractor to carry out the checks to ensure that they comply with regulations. However, these checks would usually include a smoke test to establish the clearance time of the booth, checking and changing the booth filters as needed and checking the quality of the breathing air.

The ceiling filters (entry) were usually changed every six months by the contractor. The floor filters (exit) tended to be changed much more often than the ceiling filters, typically every six weeks or so by the sprayers themselves, as they were more likely to get clogged up with paint than the ceiling filters.

In the case of one of the home-made booths, the bodyshop's insurance company would conduct an air flow check once a year. The technical expert's view of this booth was that, due to the horizontal air flow, the booth was more akin to a spray room, due to its poor ventilation.

In most cases, the contractor tended to change the filters in the spray booth and then conduct a smoke test to establish the clearance time. This is not ideal, as this will record the best case of clearance, ie when the filters are clear. It would be of more benefit to establish the clearance time just before the filters are changed, in order to have a margin for the worst case of clearance, ie when the filters are performing at minimum capacity.

5.3 SPRAY GUNS

All of the sprayers working in the 30 bodyshops that were visited used HVLP spray guns, with the exception of one owner/manager bodyshop. Many bodyshop managers commented that they had used HVLP guns for a long time. The guns were usually made by DeVilbiss or Sata.

The compressed air supply to the guns also fed the visor in all of the bodyshops using HVLP guns, with the exception of one bodyshop. This meant that if there were problems with the flow of air to the mask, it would be noticed immediately by the sprayer as the pressure on the gun's trigger would be reduced and the gun would not spray efficiently.

At the bodyshop where there were separate supplies of air to the gun and the mask, regular mask checks were undertaken to make sure that the air supply was in order, comprising daily checks by the sprayer, monthly by the manager and three-monthly by an external contractor.

5.4 PAINTS

The paints used by the 30 bodyshops that were visited tended to be specified either by the manufacturers, if they had a contract with a dealership, or the insurance company, if they had an insurance company contract. There have been considerable changes in the types of paints on the market over the past 30 years. At present, most bodyshops are using:

- primers that are either water-based or isocyanate-based

- basecoats that are water-based (although these may contain a small amount of isocyanates), and
- lacquers that are isocyanate-based.

One small bodyshop (two owners in partnership and no employees) was continuing to use non-water-based basecoats, which were non-compliant. The manager here said that he preferred these basecoats.

Where there were spray booths (in all but two of bodyshops visited), the managers said that all the spraying was done inside the booth and that no spraying was carried out outside the booth. However, visual evidence on some occasions (usually in the very small bodyshops) suggested otherwise, pointing to the fact that, on occasion, some spraying is taking place outside the booth.

In some of the bodyshops visited, some touching up, rollering, brushwork or use of aerosols usually takes place outside the booth.

Bodyshop managers were asked why they used two-pack paints. Most said that they were the best on the market, taking a shorter time to harden and providing a better finish – one bodyshop manager said that the isocyanate lacquers were the only products that could replicate the manufacturer's finish. Some said that the car manufacturer or the insurance company stipulated their use. Other reasons cited included ease of application and customer expectations.

The bodyshop managers were also asked about the problems associated with these paints. Risks to health were cited as the main problem, although one bodyshop manager did not realise that the two-pack paints still had isocyanates in them.

When asked whether they would use safer but more expensive finishes in preference to isocyanate-cured coatings, most managers said that they would, but only if they could pass the cost on to the customer, or if the manufacturer or insurance company agreed to this and paid for it. Cost and the constraints of the manufacturer or insurance company were most frequently cited as barriers to alternative coatings. Overall, however, it should be remembered that managers have tended to say that they would do whatever they need to in order to be safe, and so it would theoretically be interesting to see how managers would react and what pressures they would find themselves under if safer but more expensive finishes were widely available.

The majority of managers in the bodyshops visited had not used non-compliant coatings, although one admitted to using non-compliant base coats currently. Some manager said that they had used non-compliant coatings in the past, but no longer.

From the telephone survey, just over half of the 500 interviewees (54 per cent) reported that people in the industry used non-compliant coatings because they were cheaper. The percentage of respondents holding this view ranged from 51 per cent in smaller companies to 64 per cent in the largest companies.

5.5 PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment for sprayers included air-fed masks, overalls, gloves, ear defenders and rubbing down masks. From the telephone survey, when asked whether wearing proper PPE can get in the way of doing a good job, 33 per cent of respondents said that it could, although this was the view of a greater proportion of those in smaller companies than those in larger companies: 56 per cent of sole traders and 37 per cent of

those in small companies (2-5 employees) agreed with this, compared with 17 per cent of those in companies of between 6 and 14 employees and 16 per cent of those in companies of 15 employees or more.

Below, we examine practice around the use of masks in more detail.

5.5.1 Use of masks

Telephone survey

From the telephone survey, the most frequently cited mask in use was the air-fed full face mask, followed by the activated charcoal mask. Almost all of those in large companies used air-fed full face masks. Table 5.4 below gives details of bodyshops use of different types of masks.

Table 5.4: Use of different mask types by employer size

| | Sole trader % | Small (2-5 employees) % | Medium (6-14 employees) % | Large (15+ employees) % | All companies % |
|---|----------------------|--------------------------------|----------------------------------|--------------------------------|------------------------|
| Activated charcoal mask | 73 | 59 | 46 | 39 | 55 |
| An air-fed (A/F) full face mask/visor | 62 | 84 | 97 | 98 | 85 |
| An air-fed (A/F) half mask | 36 | 31 | 21 | 17 | 27 |
| A dust mask | 67 | 55 | 45 | 43 | 53 |
| Goggles | 55 | 48 | 41 | 40 | 47 |
| <i>No. of responses on which %s are based (N)</i> | <i>121</i> | <i>164</i> | <i>116</i> | <i>100</i> | <i>501</i> |

Note: Respondents were free to give as many responses as applied to them, therefore the percentages will not sum to 100.

Source: IES/MORI survey of bodyshops 2010

Bodyshop visits

Almost all the sprayers working in the bodyshops visited for this research used full face air-fed masks. These were supplied as standard by their employer. The sprayers appeared to be happy to use the masks, on the whole, and did not experience any discomfort when wearing them. In most cases, they had used these masks for many years and had become used to them. There were two exceptions to this: one owner/manager by himself, who was using a carbon filter half mask which was not air-fed, and managers/sprayers in another small bodyshop who were using a twin cartridge mask for small jobs, such as a wing or a door. Full face air-fed masks were available. Here, the manager/sprayer believed that the main danger was from vapour rather than particles.

Overall, there was a lot of anecdotal evidence from the bodyshop visits about how things had changed over the past 30 years, when air-fed masks were not the norm and sprayers would not spray in dedicated spray booths.

5.5.2 Full-face vs. half-face masks

Sprayers were asked specific questions relating to their preferences for full face or half face air-fed masks. Although most of the sprayers interviewed wore full face masks, some wore half face masks: overall, younger sprayers tended to prefer full face masks and older sprayers, over the age of 40, tended to prefer half face masks, often purely because, in both cases, that was what they were used to. One bodyshop allowed sprayers to choose whether they used full face or half face masks. In general, in this bodyshop, the older sprayers used the half face and the younger sprayers used the full face masks.

As noted above, the sprayers seemed in general happy with the full face masks: they were used to using them and found them comfortable. They also accepted that they needed to wear them for health and safety reasons.

'You have got your plastic frame and then the film goes over the top, so every time you replace the filter you get a clear vision. I wear contact lenses and on the old [full face] masks it used to have a plastic screen and then the cover went over the top but if it got scratched, for me I would end up looking at the scratch rather than looking at what I am doing. So now you can change the visor on a regular basis and you just get crystal clear vision and it makes it a little bit easier to see what you are doing.'

(Sprayer (aged 36))

Preferences for full face over half face masks rested upon issues such as the perception that they provided better protection from the paint: some sprayers said that the lacquer would get onto their face if they were only wearing a half-face mask.

'If you haven't got a full face on you are going to shut your eyes because you can't see what you are spraying and all your eyelids get sticky with lacquer, so I don't see it's a good way to go with half face masks.'

(Sprayer (bodyshop with 15+ employees))

'You are not protected and you can get your eyes sticking and stuff like that if you are using lacquers and what have you.'

(Sprayer (bodyshop with 15+ employees))

Other cited advantages of the full face masks included:

- full protection
- less chance of leaks
- the only option if the sprayer wore glasses.

Many sprayers said that they used to wear half face masks, but now wore full face masks and were happier with them.

The main area of discontent around the full face masks was limited visibility which led to distortion of vision and increase of glare from the booth lighting (see also Section 6.3 on lifting visors). This was particularly acute if the sprayer was working low down in a booth, possibly on a wheel arch, or working on the inside of a light commercial vehicle.

'Visibility is better if you haven't got a full face on, if you have just got like a charcoal mask on, if you were just doing a base coat which is like emulsion, it is better.'

(Sprayer (bodyshop with 15+ employees))

'I don't think [the full face masks] affect your ability to do the job but I do think sometimes they hamper your vision, if you get a bit of glare off a light and so on and obviously overspray on your visor cleans off but I know for instance, painting a van, you have got to paint the inside of the van and then the outside and by the time you have come out of the inside you are pretty much whatever colour the van is. So everything is hampered.'

(Sprayer (bodyshop with 15+ employees))

One sprayer was quite honest in stating that the main thing that he did not like about the full face masks was that sprayers *'had to lift them to see the job'*.

Some sprayers expressed the view that they did not really like the full face masks, but accepted the necessity of wearing them for protection against isocyanates.

'It is mostly what you get used to. I am now used to the full face mask.'

(Sprayer (bodyshop with 15+ employees))

A minority of the sprayers wore half face masks. In general, these tended to be older sprayers, over the age of 40, who had been used to wearing half face masks and continued to do so out of personal preference. Sprayers liked the fact that the half face masks gave more visibility than full face masks.

However, sprayers disliked the fact that perspiration built up inside goggles and condensation in the half mask itself, which was uncomfortable. In addition, sprayers felt that half face masks did not provide as much protection as full face masks. Some sprayers also maintained that the goggles were hard to clean, whereas the visors on the full face masks were much easier to keep clean, due to the tear-off strips. Others did not like the fact that they were *'fiddly to use, with too many bits and pieces'*, in comparison to the full face masks.

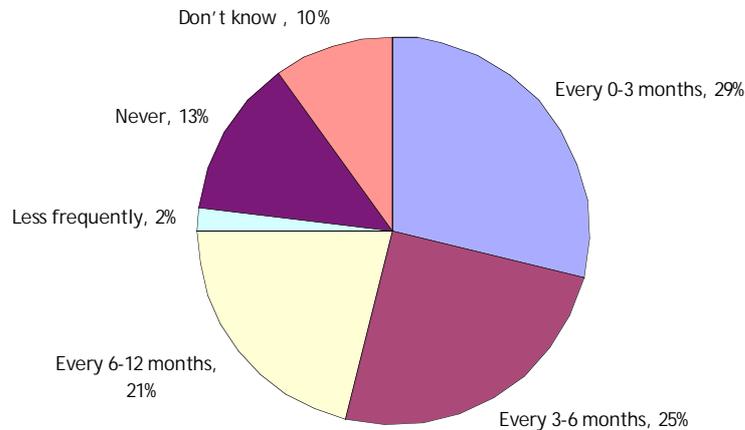
5.5.3 Cleaning and maintenance of masks

Telephone survey

Figure 5.6 sets out responses from the telephone survey on the testing of masks. Three-quarters of the respondents who had air-fed masks (75 per cent) said that they tested their air-fed masks at least once a year, with over half (54 per cent) testing them at least every six months.

Thirteen per cent reported that they never tested the masks. This group comprises exclusively sole traders, 34 per cent of whom never test their air supply, and companies with 2-5 employees, for whom the figure is 16 per cent. Around 10-12 of the companies did not know how often they tested the air supply – here there was little variation by company size.

Figure 5.6: How often air fed masks are tested



Base is all employers using air fed masks (462 employers).

Source: IES/MORI survey of bodyshops 2010

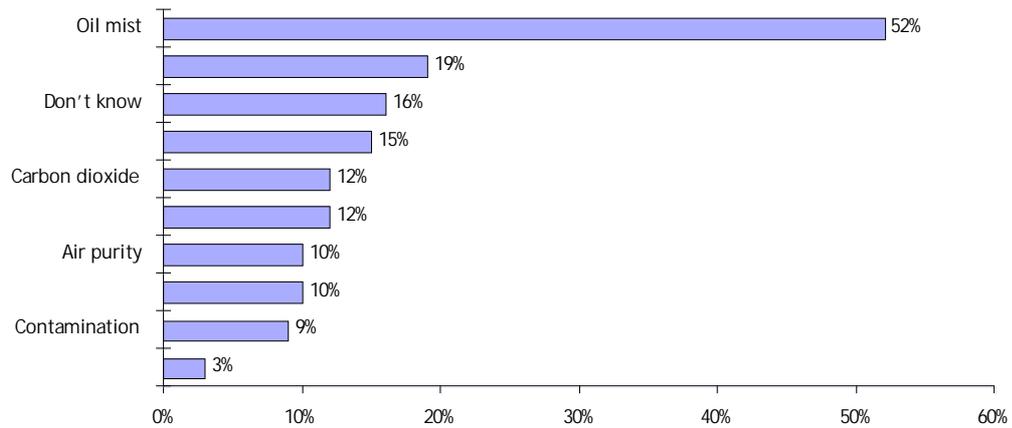
Organisations used a wide variety of staff and external organisations to test the air supply for their air-fed masks. The biggest group (44 per cent) reported using a consultant, while others had the equipment tested by manufacturers and suppliers. Only a handful used insurance companies, spray booth services or MVRA.

Sole traders and small organisations were more likely than their larger counterparts to test the equipment themselves. Small, medium and large organisations were more likely than sole traders to test the air supply (46-51 per cent).

Interestingly, companies varied in what they tested for (or believed was being tested for). Oil mist, followed by moisture and carbon monoxide were the most frequently cited tests carried out on the air-fed masks.

While the frequencies are too small to carry out meaningful analysis by company size, it appears that large companies were more likely than smaller ones to say that they did not know what the masks were tested for (perhaps because they were more likely to contract out the tests, rather than carrying them out themselves). For details on what air-fed masks were tested for, based on responses from the telephone survey, see Figure 5.7 below.

Figure 5.7: Tests conducted on air fed masks



Base is all employers using air fed masks (462 employers).

Note: Respondents were free to give as many responses as applied to them, therefore the percentages will not sum to 100.

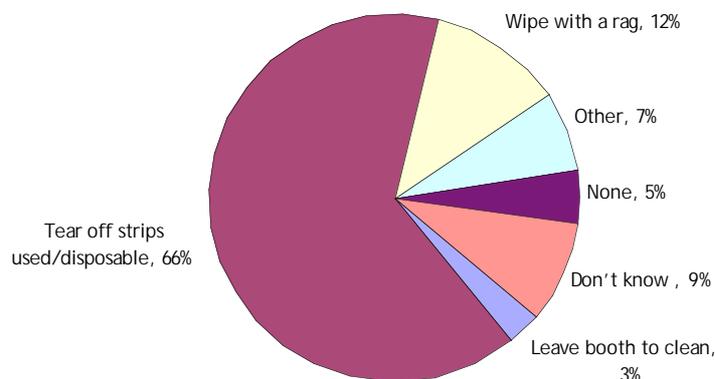
Source: IES/MORI survey of bodyshops 2010

Figure 4.9 shows the data from the telephone survey on mask cleaning. Two-thirds of bodyshops in the telephone survey said that they kept the visors clean by using tear-off strips. This is reinforced by the findings of the bodyshop visits (see below).

Interestingly, there was not much variation in cleaning practices by company size; 10-15 per cent of respondents in companies of all sizes reported that they wiped the visors with a rag – sole traders and small companies were only slightly more likely to do so. Equally, four to six per cent of companies of all sizes said that they took no steps to clean the visors.

Respondents from larger companies were more likely to say they did not know what steps were taken to clean the visors (perhaps because they were less likely to carry out the work themselves or directly supervise the work).

Figure 5.8: Steps taken to clear visors when spraying



Base is all employers using air fed full face masks (424 employers, and one non-response).

Source: IES/MORI survey of bodyshops 2010

Bodyshop visits

In the bodyshops visited, the full face air-fed mask visors were generally kept clean by using tear-off strips that can be attached to the visors and torn off if they become spattered with overspray. Sprayers tended to do this either before or after a job and not during spraying. This system, which was widespread, seemed to work well and sprayers on the whole appeared to be happy with this. Sprayers said that the tear-off strips tended to last up to a month, depending on what type of jobs the sprayer was doing, although one sprayer said that he would get through around three tear-off strips a week.

Sprayers themselves tended to maintain their masks, although in some bodyshops, the manager would carry out a routine check of masks. For the sprayers, this seemed to be part of the daily working routine.

'[The mask] just plugs into an airline and then you have got a small tube attached to it and then if you feel the air coming out, that's it, the rest of it is visual that you keep an eye on and that's it. Sometimes they do tend to out of wear get out of shape, so it doesn't cling to your face as it should do so. When that does happen, then [the bodyshop manager] replaces it with a new one and on average they will last me a good year with the actual mask itself. After that I will get a new one.'

'Do you tend to look at it every day?'

'Well the only bit I do look at is just the visual part of it, if it's going to be good enough for me to be able to do the next job and if it isn't then it gets another visor on it, another disposable visor, that's it that's the only maintenance I do with it really.'

(Sprayer (bodyshop with 6-14 employees))

Air-fed mask belt filters would be checked during routine services, usually at least every three or six months, or when needed. Some masks had charcoal filters which changed colour when they needed changing (from black to light grey). Sprayers would also informally check their own masks before using them. In one large bodyshop, the sprayers were required to examine their own equipment regularly, and to sign to that effect. They were required to

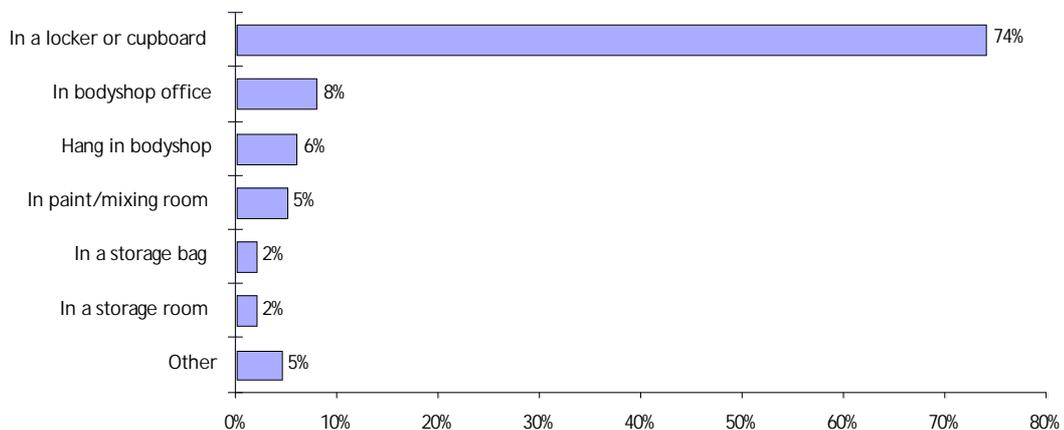
report any defects to the management and the bodyshop manager kept a spare mask in the office in case a defect was discovered.

Most of the sprayers wore masks that had an air supply which also fed their gun. This meant that they would know immediately if there was any drop in pressure in the air feeding the mask, as the gun would not work. In addition, many sprayers spoke of the fact that they would be able to smell the paint if there were any leakages in the mask, and so would know straight away if they were not functioning properly.

Storage of masks

From the telephone survey, most bodyshops said that they stored the masks in a safe place, either a locker, cupboard storage bag or storage room. Only three individuals reported that they kept the masks in the spray booth itself (one sole trader and two small companies). For details on where masks are stored, based on responses to the telephone survey, see Figure 5.9 below.

Figure 5.9: Where air fed masks are stored



Base is all employers using air fed masks (462 employers).

Note: Respondents were free to give as many responses as applied to them, therefore the percentages will not sum to 100.

Source: IES/MORI survey of bodyshops 2010

Managers in the bodyshops visited for this research said that masks were stored in lockers in many bodyshops, or in boxes with lids. Most said that they could close the lids, although some said that they did not keep the boxes closed. In others, the masks were kept on hooks in the workshop outside the booths, or stored in boxes without lids.

5.6 CHAPTER SUMMARY

This chapter has examined working practices and health and safety practices in relation to equipment such as spray booths, spray guns, paints and masks. The main findings are:

- The majority of the bodyshops had a spray booth, although around one-fifth of those responding to the telephone survey said that they had a spray room.

- There was widespread awareness of booth clearance times – sprayers and many bodyshop managers knew them off by heart. The bodyshop managers who did not know what they were instantly pointed to the fact that the clearance time was marked up on the outside of the booth. There seemed to be lower awareness of clearance times from the telephone survey responses, but this may be because the bodyshop managers did not have the figures to hand when responding to the survey.
- Respecting clearance times was not highlighted as a problem, although it was an issue for some smaller bodyshops in the telephone survey.
- There is evidence of lack of knowledge around the fact that the spray mist is dangerous because it is invisible.
- Testing and maintenance of spray booths was variable by bodyshop size – larger bodyshops maintained their booths regularly, whereas some of the smaller bodyshops did not.
- Bodyshop managers use the isocyanate paints because they believe that they provide a more durable finish and there is no real alternative. They did not see that this would change in the near future.

The majority of sprayers wore full face air-fed masks, although some of the older sprayers wore half face air-fed masks. There were some problems with visibility in relation to the full face masks, but the sprayers who wore them liked the full face protection that they gave. Those who wore half face masks liked the visibility, but did not like the fact that their face was more exposed to the paint.

6 HEALTH AND SAFETY PROCEDURES

This chapter looks at a range of health and safety procedures in bodyshops, including instructions and training, bodyshop signage, whether or not sprayers lift their visors while spraying, and the influence on behaviour of factors such as working time and external factors such as work for insurance companies.

6.1 HEALTH AND SAFETY INSTRUCTION AND TRAINING

There was a mixture of practice around health and safety instruction and training in the bodyshops that were visited for this project. In some of the larger bodyshop groups, a dedicated health and safety manager from the parent company would look after the bodyshop, appearing on site as and when necessary. In the majority of the bodyshops, the bodyshop manager was the designated person with health and safety responsibilities. When asked, sprayers were immediately able to identify their bodyshop manager as the person that they would go to if they had any concerns or issues around health and safety.

A range of systems were in place to cascade the information down to the sprayers, some more formal than others. Some of the larger bodyshops tended to have regular, often monthly, staff meetings, at which a range of issues, including health and safety, could be raised. Some of the smaller bodyshops were more informal. Again, there was a general feeling that all the bodyshop manager could do was to impart the advice and help where possible, but that the health and safety of individual sprayers in terms of their behaviour was up to the individual.

‘Do you cascade information down through the business?’

‘Definitely.’

‘How do they respond?’

‘They’re all grown men. They want to live as long as possible.’

(Bodyshop manager (6-14 employees))

Sprayers were sent on courses which included a health and safety element. In the bodyshop, the manager was usually the named person on site with health and safety responsibilities. Sprayers knew this and were comfortable with approaching him with any health and safety problems.

6.2 SIGNAGE IN THE BODYSHOP

Looking around the bodyshops that were visited, booth clearance times were usually marked on the outside of the booth. In a couple of instances, managers knew about the clearance times, but had not marked them up, but were intending to do so after the visit.

One issue that was picked up by the technical experts on the project was that there was often no sign warning of hazardous chemicals on the door to the mixing room. Managers were grateful for the advice.

6.3 USING THE MASKS AND LIFTING THE VISORS

One of the main issues to emerge from this research was the practice around sprayers’ use of their masks and the temptation to lift the visors. This is an issue that is well known in the

sector. One of the stakeholders interviewed for this project, a trade union representative, noted that lifting the masks was one of the main problems faced by those trying to ensure full protection for sprayers.

Bodyshop managers and sprayers all had an opinion on this, with many admitting that visors are lifted. The main issue was that it can be difficult to see an exact finish while wearing a full face visor and it was important financially to do a good job first time. Respraying would cost time and money and was not considered to be an option.

Sprayers said that it was difficult to see perfectly through the visor, and that this was especially the case with painting jobs that are lower down in the booth, due to the way that the booths are lit.

6.3.1 Bodyshop visits

Manager views

From the bodyshop visits, managers reported that they were well aware of the fact that it was dangerous to lift the visor and that sprayers were instructed not to do so under any circumstances while in the spray booth before the clearance time had elapsed. This instruction was often included in induction courses and health and safety courses, and reinforced by the bodyshop managers.

There was also, however, in some bodyshops, a feeling expressed by the managers that not lifting the visor was such a basic part of the job that all sprayers would simply know not to do so.

‘What do you do to make sure people don’t [lift their visors]?’

‘Nothing. We expect them to know themselves. Health and safety normally is common sense. I believe my guys have a lot of common sense. They don’t want to be breathing in nasty fumes. If I saw somebody breaching health and safety it would be a different story.’

(Bodyshop manager (6-14 employees))

Some bodyshop managers acknowledged that while they could tell their staff what to do, they could not watch them all the time, and so it was difficult to say with absolute certainty that they were not lifting their visors to check the paint finish.

‘I am here as a manager. I am not here as a babysitter. They know the rules and they know what they should or shouldn’t be doing whilst they are in there.’

(Bodyshop manager (15+ employees))

‘Well, yeah, I hope they don’t but they might do and they are daft if they do because they know they shouldn’t, they have got the films and that. I can’t say whether they do or they don’t to be honest, I just wouldn’t know. I have never seen them do it, so I can only imagine they don’t. Who knows?’

(Bodyshop manager (15+ employees))

'Do sprayers lift their visors in the booth?'

'I'd say yes, they'll say no.'

(Bodyshop manager (6-14 employees))

'I'd be a liar if I said no.'

(Bodyshop manager (6-14 employees))

'They do, yeah, I can take you anywhere and if you didn't tell them who you were, I could say "watch this guy paint this car" and he would do it. They know that they shouldn't do it here but I don't see them all the time and I bet sometimes they still do - that's the worst time they could ever do it and they all know that.'

(Bodyshop manager (15+ employees))

'It's the same story: you can give everybody everything but my brother says "well if they don't use it, you sack them". I said "hang on a minute you'll end up with no staff" and that is all there is to it.'

(Bodyshop manager (15+ employees))

Another bodyshop manager, who used to be a sprayer, spoke of the habit of lifting the visor, and the quasi-superstitious notion that if they did not lift it, the job would not be right, although none of the sprayers we spoke to for this research said that they had ever had to respray a job (see also below for sprayer's view on this).

'I have seen someone lift a visor probably about 30 seconds after they have just sprayed a door ... I have done it myself when I used to spray, so I know it is just a force of habit. You want to look at the finish you have got - you know it's alright because you are so used to doing that, releasing that trigger and spraying, but it is just a force of habit.'

(Bodyshop manager (15+ employees))

Sprayer views

A large number of the sprayers interviewed admitted lifting their visors. They all knew that they were not supposed to do this for health and safety reasons, and were aware of the possible consequences, but admitted that they did anyway, to check the finish.

Some felt that the lighting in the booths was not good enough to see the finish properly, particularly low down in the booth, and the mask placed more layers of plastic between the sprayers' eyes and the paint job. Below is a selection of quotes from sprayers on this subject.

'If you are doing a big job it can be pretty foggy in there basically but sometimes you do just lift [the visor] just to try and look because sometimes you need to look up at the panel and sometimes you need to do it. I think all depending on how soon you have painted because the clearance times are pretty low you see, so if you can just stand back in the oven in the furthest corner away and then you can see it literally moving away and you can probably lift up and can get a distance to look at it, never do it when it is totally covered ... if you calculated if you did five lifts of your helmet a week it's like spending so many minutes in a booth with isocyanates that could do some serious damage, so you have got to look at it like that really. Some people go "Ill be alright" but over a period of time it can be pretty serious. It's all right now

when you are young but it's when you get to 65 and you are walking around with a gas and oxygen tank on you...'

(Sprayer (bodyshop with 6-14 employees))

'Nine times out of ten if you finish painting the panel and you want a clear view of what you have just done, then the visors are a little bit misleading. You have got two films of plastic over your eyes it is not going to give you 20/20 vision, that would be the main reason ... I think people do do it but at the end of the day the people that do it are not necessarily doing it for the wrong reasons, you know - they are trying to earn a living and so their ultimate aim is to make sure that the job is done and it looks good. Everything we do is what the customer sees, so if you can't see it properly and then it goes out and he hasn't got enough paint at the bottom of his door then he has got to redo the whole job. Which is then costing him money and let alone the company, so yeah it must happen but like I say you have to take a certain amount of responsibility for your own actions.'

(Sprayer (bodyshop with 15+ employees))

'Sometimes especially lower areas where I am painting we tend to [lift the visor] due to the light source being limited on such a low surface, so occasionally you do tend to do that out of habit more than anything else. We try to avoid doing it but I'll be honest, sometimes we do do it you know, from a painters point of view, you do it. You lift and check and see if you have got it all where you should have and that's it, so it's out of habit.'

(Sprayer (bodyshop with 6-14 employees))

'Have you ever lifted your mask?'

'Yeah.'

'Do you think it is common?'

'I would say so, yeah.'

'Why do you lift it?'

'Sometimes it's when you have painted something, it's just quick to check it to make sure the job is right or if there's something wrong.'

'How many times is it wrong when you lift the mask?'

'Never.'

(Sprayer (bodyshop with 15+ employees))

However, some sprayers were cautious in the interview and said that they did not lift their masks. One sprayer said that he avoided lifting his mask by holding his gun near to the panel he had just painted. He said that in this way, he could judge the finish by how good the reflection was, which was preferable to lifting the mask.

Another began by saying that he did not lift his mask, but then, upon closer questioning, admitted that he did.

‘Do you lift your mask?’

‘No.’

‘Never?’

‘Well, occasionally, if there is a problem.’

(Manager/sprayer (bodyshop with 2-5 employees))

6.4 WORKING HOURS AND THE BONUS SYSTEM

The bodyshop managers visited said that paint sprayers tend to work set hours, with regular morning, lunch and afternoon breaks. None of the sprayers spoken to during the bodyshop visits were dissatisfied with their working hours and felt that they had enough time to take a break. Some of the larger bodyshops worked on a shift system, comprising an early and a late shift. Some bodyshops, including some of the smaller ones, allowed sprayers flexibility in their working hours: in one bodyshop, the sprayers tended to start work at 5.30am in order to be able to work before the panel beaters began their work later in the morning.

A majority of the bodyshops visited operated a bonus system under which sprayers could earn extra money if they completed a job ahead of the time allotted to it. For example, if a job was estimated to take ten hours and the sprayer was paid £9.50 an hour, if the sprayer completed that job in nine hours, the sprayer would earn an extra £9.50. However, if the sprayer took 11 hours to perform that work, they would forfeit £9.50 to their employer. Bodyshop managers and sprayers were asked whether this system placed extra pressure on the sprayers. The responses seemed to indicate that although it meant that sprayers must work consistently and constantly in order to earn their bonus, they did not feel under undue pressure.

However, in the bodyshops that did not operate this bonus system, the feeling was that they did not want to because they did not want to place sprayers under time pressure in this way. One bodyshop manager stated explicitly that he did not want to operate a bonus scheme for sprayers as he believed that this would cause them to rush jobs and therefore compromise the quality of the high-profile brand to which the bodyshop was linked.

One sprayer, who had been a sprayer for 30 years, said that he used to work on a bonus system, but now did not, and much preferred not to.

‘I personally found [the bonus system] didn’t work actually because a few days you would be working your socks off and then it was a pointless exercise, I don’t like it at all. Basic pay and overtime, if it’s available, I am happy with.’

(Sprayer (bodyshop with 6-14 employees))

Another sprayer admitted that the time pressure that the bonus system placed on sprayers could lead them to cutting corners in order to ensure that they received their bonus.

‘Do you feel like you are under time pressure?’

‘Yeah, all the time, there are targets to meet and you get time on a job which you have got to try and get it in with that time. I am on a bonus scheme as well, so to be honest with you, it is how many corners you can cut to get somewhere near your time because at the end of the day it is all about the money. Basically we work 39 hours a week and anything over that you get paid at your hourly rate, so if you get 50 hours in, then you have made a good chunk of money. You need to make a good start at the

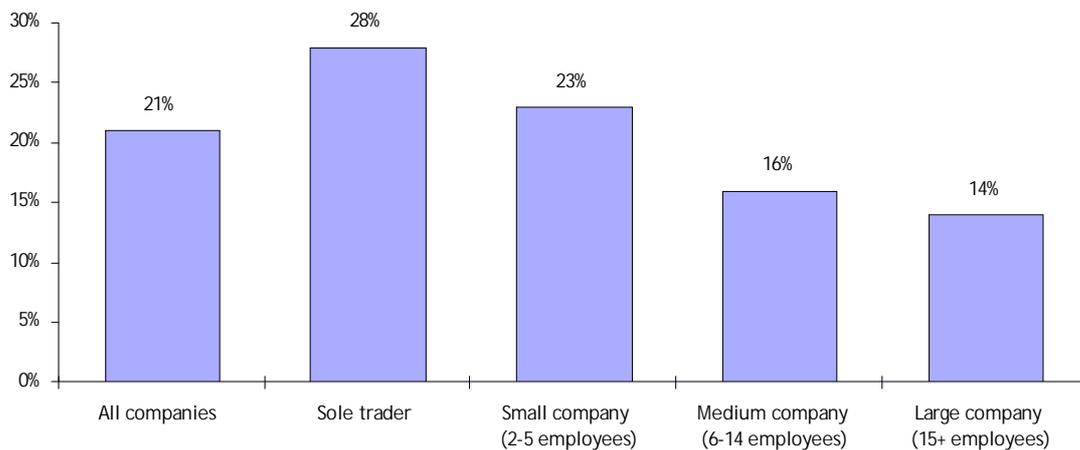
start of the week to get some money and that is when you start cutting corners a little bit too much, if you get behind and stuff like that.'

(Sprayer (bodyshop with 6-14 employees))

6.4.1 Out of hours working

Figure 6.1 sets out responses from the telephone survey on whether employed sprayers often work on a self-employed basis during evenings and weekends. Managers in smaller bodyshops and sole traders tended to agree more often that this was the case, compared with managers in large companies – 28 per cent in the case of sole traders, compared with 14 per cent in the case of managers in large companies of 15 or more employees. This has implications for the health and safety of the sprayer, if the proper procedures are not in place, but also for the employer, if the sprayer becomes sensitised and tries to claim compensation from the employer.

Figure 6.1: Proportion of employers agreeing that 'employed sprayers often work on a self-employed basis during evenings and weekends' by employer size



Base is all employers (121 sole traders, 164 companies with 2-5 employees, 116 companies with 6-14 employees, 100 companies with 15 or more employees).

Source: IES/MORI survey of bodyshops 2010

Bodyshop managers and sprayers were asked whether they thought that it was common for sprayers to work for themselves at evenings and weekends. Sprayers were asked directly whether they did this or whether anyone they knew did.

The responses were mixed: a majority of managers and sprayers said that they did not think that it was a common and widespread practice these days, in contrast to the past – some 20 to 30 years ago. Some sprayers said that they earned enough in their day job and did not need to work off site.

'I don't do it, I don't see the point because I can earn enough money here without going home and doing it again.'

(Sprayer (bodyshop with 15+ employees))

Another sprayer made the distinction between younger sprayers who were maybe more likely to do this in order to earn some extra cash, and the older sprayers who did not need to earn as much money.

'I suppose if somebody can start making a few extra quid then yeah, probably with the recession as well, you will probably start to get a little bit more doing that now, but then again it depends if you are married, single or with kids and if you have got the time to do stuff like that. I can see people's point of view if they are doing extra work on the weekends because in this tough climate you have to keep your wages up.'

(Sprayer (bodyshop with 6-14 employees))

One stakeholder interviewed for this project, from a trade association, noted that the practice of being able to work overtime for their employer would probably mean that sprayers do not need to work for themselves in their free time.

'I think that is less significant an issue than it used to be I think quite simply sprayers can earn as much financially working extra hours for their existing employer.'

(Trade association stakeholder)

Some bodyshop managers agreed with this, taking the view that they looked after their staff well in terms of pay and conditions, and therefore there was no need for them to look elsewhere to make money.

'There used to be a time, probably going back about ten or 15 years ago, when people did do work at home in someone's garage ... it would be difficult to spray some of the products that we use now outside this environment anyway, it wouldn't result in a very good job. So the answer to that really is there is no benefit in it, there is no benefit in someone doing something from home, not if you are paying them top wages and good bonuses and you look after them. You have got to be a pretty sort of greedy person to want to then start going home and doing something at night really?'

(Bodyshop manager (15+ employees))

Another bodyshop manager echoed this, noting that the practice of working outside of working hours was probably more common in the smaller businesses than the larger, well-organised bodyshops.

'Do you think that's a problem in the industry?'

'No, I think it probably would be with Fred in a shed, but here we don't have overtime, we don't work Saturdays, we don't work Sundays because we think that they need a bit of their own time. They work 40 hours a week Monday to Friday and we pay the best in the area because I want the best on the shop floor.'

(Bodyshop manager (15+ employees))

A number of managers and sprayers thought that the practice was still relatively widespread, however. This is difficult to monitor and it is difficult to control health and safety practice outside the bodyshop. One bodyshop manager took the view that it probably went on, but if it was not adversely affecting the business, there was not a great deal the organisation could do about it.

'I don't know how much it happens now, it used to happen a lot. We don't really delve into it now, I think we questioned it once or twice when staff were repeatedly calling in sick and we thought they were doing it then, so our business was suffering, but if it's at the weekends in all fairness it is not affecting our business and we can't stop them doing it. It's their choice.'

(Bodyshop manager (15+ employees))

Another said that sprayers were quite open about doing work on the side at weekends.

'I know for a fact they work at weekends for themselves, there is nothing I can do about that ... We know because when you ask them "can you work this weekend?", "Oh no I am busy, I have got a few jobs to do myself" because it's friends' cars and mums' cars.'

'Are they using the masks?'

'I don't know what they use but I wouldn't have thought so.'

(Bodyshop manager (15+ employees))

6.5 EXTERNAL INFLUENCES ON BEHAVIOUR

Table 6.1 sets out responses from the telephone survey relating to work from insurance companies. Most organisations reported being commissioned by insurance companies to carry out some bodyshop work, with only 12 per cent of the organisations claiming they had no insurance clients.

The larger the organisation, the greater the proportion of work they carried out for insurance companies. For instance, 90 per cent of large companies (15+ employees) reported procuring more than half of their work from insurance companies, compared with only 12 per cent of small companies (two to five employees) and three per cent of sole traders.

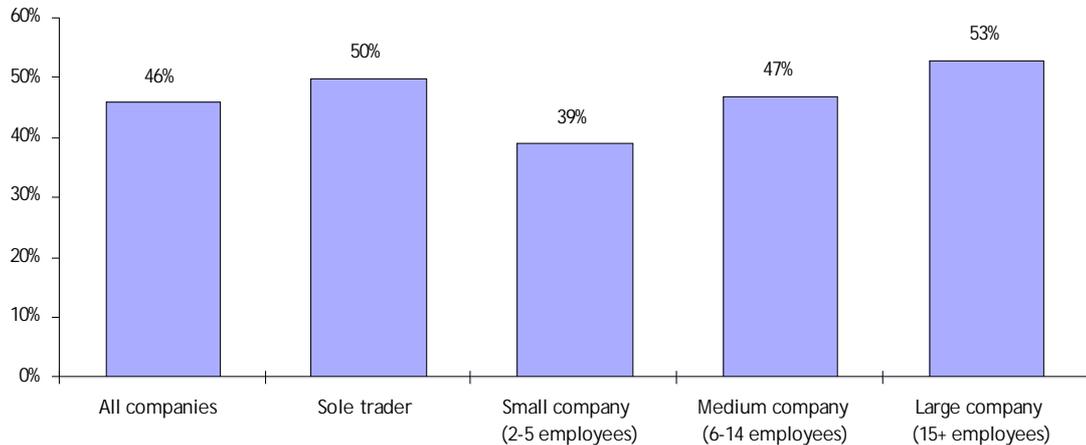
Table 6.1: Proportion of work carried out for insurance company clients by employer size

| | Sole trader % | Small (2-5 employees) % | Medium (6-14 employees) % | Large (15+ employees) % | All companies % |
|---|----------------------|--------------------------------|----------------------------------|--------------------------------|------------------------|
| No work from insurance companies | 31 | 9 | 3 | 4 | 12 |
| Up to 50% of work from insurance companies | 66 | 79 | 34 | 6 | 51 |
| More than 50% of work from insurance companies | 3 | 12 | 63 | 90 | 38 |
| <i>No. of responses on which %s are based (N)</i> | 118 | 162 | 114 | 98 | 492 |
| <i>No. of missing responses (N)</i> | 3 | 2 | 2 | 2 | 9 |
| <i>Total (N)</i> | 121 | 164 | 116 | 100 | 501 |

Source: IES/MORI survey of bodyshops 2010

When the telephone survey respondents were asked whether insurance company work puts sprayers under pressure to do the job quickly, just under half (46 per cent) said that it did. However, there was no particular difference in opinion according to size of company. For details, see Figure 6.2 below.

Figure 6.2: Proportion of employers agreeing that ‘insurance company work puts sprayers under pressure to do the job quickly’ by employer size



Base is all employers (121 sole traders, 164 companies with 2-5 employees, 116 with 6-14 employees, 100 with 15 or more employees).

Source: IES/MORI survey of bodyshops 2010

The bodyshops visited for this research were a mixture of those that were recommended bodyshops for certain makes of car or insurance companies, and those that operated independently of external organisational influences.

Where bodyshops had a contract with particular car dealerships, this had an influence on a number of areas of practice. Firstly, this influenced the materials that the bodyshop could use, primarily the paints. For example, if a repair was being carried out to a BMW, it needed to be up to the standards set by BMW, which would specify the paint manufacturer.

Secondly, these contracts also had an influence on health and safety procedures: in some instances, the manufacturers specified that the bodyshop needed to reach certain standards, such as PAS 125, the kite mark for vehicle body repair. This then acted as a driver to compliance with health and safety standards and to practices beyond these standards.

From the telephone survey, the majority of organisations surveyed (67 per cent) claimed that insurance companies did not specify the type of paint that should be used. However, the bodyshops visited often said that insurance companies set health and safety standards and specified the types of materials and the cost of the materials that should be used for repairs.

Bodyshop managers and sprayers answered questions about whether they thought that work for dealerships or insurance companies had an influence on the way that the sprayers worked and any impact on health and safety practices and procedures. There were mixed responses. Some bodyshop managers spoke of time pressure and price pressure from insurance companies – one manager had previously had an insurance company contract, but had subsequently decided to terminate it due to the pressure under which it was placing the bodyshop.

'[The insurance companies] are directing that job to me but they want it doing at a price and I have got to drop everything now and I have got to find a loan car and I have got to go out and fetch Mr Smiths car in and then we repair that car. Now that's okay but what we were doing was, we were turning away 45 quid an hour for the [dealership] people to do 27 pounds an hour for [the insurance company] and it was suicide. I took over this place in 1998 and we had seven or eight insurance approvals and we were run ragged, we had 90 cars in there in various states of repair, couldn't get parts for them. So in 2000 we started to say "no we don't want that anymore".'

(Bodyshop manager (15+ employees))

However, some managers felt beholden to insurance companies, which dictated the flow of the work.

'[Insurance companies] either flood you with work like we are at the moment and you are the best thing since sliced bread because you are working seven days a week, but come the summer when we are crying out for it, they have got their own bodyshops and all the work will be going there.'

(Bodyshop manager (15+ employees))

A couple of managers did not like working for insurance companies, but felt that there was no alternative to guarantee a satisfactory amount of work.

Others felt that insurance companies and dealers provided a regular flow of work and although they brought their own pressures, this was factored in to the way that the bodyshop worked.

'Is there more time pressure with insurance?'

'Yes, because you work on what is called cycle times, so depending on how many hours are on the job they will expect that job to be completed in a certain time. As a guidance they usually say five hours per day, so if the job was a ten hour job they would be looking for it to be done in two days. We will always give an estimated time when we think we are going to get the job done by whether it is insurance or retail customer, which we put on a board down there so the lads know when a job comes in, so it makes no difference.'

(Bodyshop manager (6-14 employees))

Sprayers in general felt that there was no real difference between work carried out for private customers and work carried out for insurance companies, as the bodyshop management would absorb any pressure on time and price.

'Well, insurance work is a little bit easier because you get a little bit more time compared to private because the private work is for the customer on the street, so the times are a bit tighter. It's about the same really, I would say – there is no difference in cutting the corner on the job or anything like that.'

(Sprayer (bodyshop with 6-14 employees))

'Some of the times we're a bit tight on the [insurance] jobs but then again we just take as long as it takes in the oven and if it goes over, it goes over - you just have to make it back on the next job that's got better times on it... at the end of the day, you have got to take the rough with the smooth. There is no point rushing it to get it through and that it has to be done again because you have rushed it and mucked it up, there is no point.'

'Do you have a preference about what types of jobs you do?'

'No, a car's a car.'

(Sprayer (bodyshop with 6-14 employees))

6.6 CHAPTER SUMMARY

This chapter has examined health and safety procedures in bodyshops, looking at training, bodyshop signage, lifting the visors when spraying, the influence of working hours, and the influence of external factors such as insurance work. The main findings are:

- Larger bodyshops tended to be more structured in their approach to health and safety training, offering courses and information and advice on a regular basis to their sprayers. In the smaller bodyshops, the health and safety instruction was more informal, with bodyshop managers tending to leave it to the common sense of their sprayers.
- The practice of lifting the visor to check the finish is a major problem, which is common across all sizes of bodyshop. Managers and sprayers knew that this was not advisable, but the sprayers were keen to ensure that the job had been done correctly – a respray would cost time and money.
- Many sprayers worked on a bonus system, under which they would earn extra money if they finished jobs ahead of the time allotted by the estimating systems. Most were happy with this arrangement and said that they needed to work consistently, although they did not feel under undue pressure. However, some bodyshops stated that they did not operate a bonus system as they did not want to place sprayers under pressure.
- There is anecdotal evidence rather than evidence of actual practice of sprayers working for themselves in the evenings and at weekends, which would put sprayers at risk of exposure and have consequences for employers if sprayers become sensitised and tried to claim against their employer.
- Work for insurance companies and dealerships was widespread and this type of arrangement would appear to drive compliance with health and safety. Around half of the telephone survey respondents thought that insurance work put sprayers under more pressure than other types of work, although the sprayers interviewed did not have strong views on this. However, there were complaints from some bodyshops that the rates paid by insurance companies did not leave much over to spend on health and safety.

7 HEALTH SURVEILLANCE

This chapter examines the incidence of health surveillance, focusing on lung function tests and urine tests. It also looks at keeping records of biological testing and of insurance cover.

Health surveillance was something of which the majority of bodyshop managers were aware, although a sizeable minority did not carry out lung function tests.

As with the technical examination and checking of equipment (see Chapter 5), bodyshops usually contracted out health surveillance to an external contractor. Popular contractors for this work included Serco (formerly Grosvenor Health), Sound Advice Safety & Health Ltd, Company Health Services Ltd and HSL.

Table 7.1 sets out responses from the telephone survey relating to health checks. On the whole, larger employers were more likely to provide health checks for sprayers. About half of medium and large employers (those with more than seven employees) provided dermatitis and hearing checks, compared to around a quarter of smaller organisations (three to six employees). Very few of the smallest organisations (sole traders or those with one extra worker) offered any kind of health checks.

Similarly, larger employers were overwhelmingly more likely to provide lung function tests to new employees, and to update them on a regular basis thereafter.

Table 7.1: Health checks provided for bodyshop sprayers by employer size

| | Sole trader % | Small (2-5 employees) % | Medium (6-14 employees) % | Large (15+ employees) % | All companies % |
|--|----------------------|--------------------------------|----------------------------------|--------------------------------|------------------------|
| Lung | 15 | 42 | 91 | 95 | 58 |
| Urine | 4 | 5 | 25 | 24 | 13 |
| Dermatitis | 2 | 15 | 50 | 50 | 27 |
| Hand Arm Vibration | 3 | 2 | 11 | 8 | 6 |
| Hearing | 4 | 13 | 45 | 55 | 27 |
| Other | 11 | 10 | 15 | 20 | 13 |
| None | 73 | 51 | 4 | - | 35 |
| Don't know | 3 | 2 | 2 | - | 2 |
| <i>No of responses on which %s are based (N)</i> | <i>121</i> | <i>164</i> | <i>116</i> | <i>100</i> | <i>501</i> |

Note: Respondents were free to give as many responses as applied to them, therefore the percentages will not sum to 100.

Source: IES/MORI survey of bodyshops 2010

When asked whether they offered tests to other employees, rather than just the sprayers, 40 per cent provided lung function tests, ranging from 73 per cent of large companies, to two per cent of sole traders. Only four per cent offered urine tests to other workers, ranging from seven per cent of large companies to one per cent of sole traders. For details of health checks offered to other bodyshop workers, see Table 7.2.

Table 7.2: Health checks provided for other bodyshop workers by employer size

| | Sole trader % | Small (2-5 employees) % | Medium (6-14 employees) % | Large (15+ employees) % | All companies % |
|--|---------------|-------------------------|---------------------------|-------------------------|-----------------|
| Lung | 2 | 26 | 72 | 73 | 40 |
| Urine | 1 | 2 | 6 | 7 | 4 |
| Hearing | 2 | 11 | 49 | 60 | 27 |
| Other | 2 | 15 | 49 | 57 | 28 |
| None | 87 | 67 | 16 | 11 | 49 |
| Don't know | 10 | 4 | 3 | 1 | 5 |
| <i>No of responses on which %s are based (N)</i> | 121 | 164 | 116 | 100 | 501 |

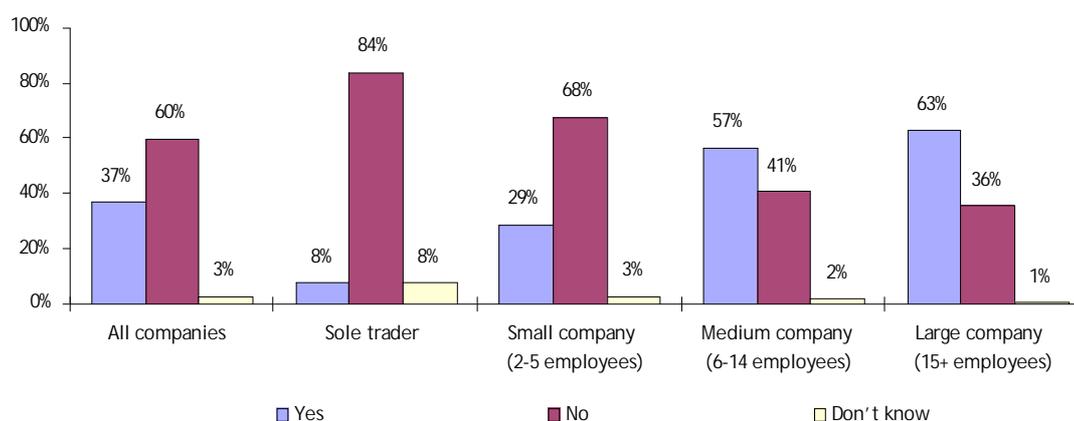
Note: Respondents were free to give as many responses as applied to them, therefore the percentages will not sum to 100.

Source: IES/MORI survey of bodyshops 2010

7.1.1 Lung function tests

Figure 7.1 and Figure 7.2 show details of responses from the telephone survey relating to lung function testing. Larger employers were overwhelmingly more likely to provide lung function tests to new employees, and to update them on a regular basis thereafter. A total of 63 per cent of bodyshops with 15 or more employees said that they give lung function tests to new employees, and 100 per cent said that they gave sprayers regular lung function tests. This compares with 8 per cent and 24 per cent of sole traders and 29 per cent and 50 per cent of small companies.

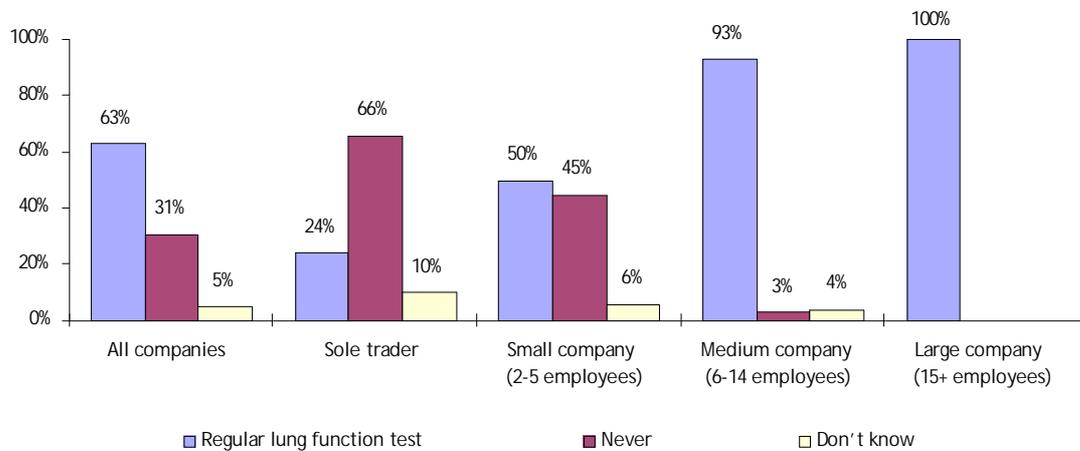
Figure 7.1: Whether sprayers are given lung function tests when they start work by employer size



Base is all employers (121 sole traders, 164 companies with 2-5 employees, 116 companies with 6-14 employees, 100 companies with 15 or more employees).

Source: IES/MORI survey of bodyshops 2010

Figure 7.2: Whether sprayers are given (or sole traders take) lung function tests at regular intervals after starting work by employer size



Base is all employers (121 sole traders, 164 companies with 2-5 employees, 116 companies with 6-14 employees, 100 companies with 15 or more employees).

Source: IES/MORI survey of bodyshops 2010

The majority of the 30 bodyshops that were visited carried out annual lung function tests on their sprayers and kept the results. Three bodyshops carried out the tests six-monthly. The tests were often also offered to panel beaters and other people working in the bodyshop. Some, although a smaller number, offered them to all staff, including reception and other white-collar staff. One bodyshop manager said that the lung function tests were offered to non-sprayers, but were not taken up.

Out of the sample of 30 bodyshops, six did not carry out lung function tests. Of these two were 'one man bands', one had two employees, one was co-owned by two partners, who were also sprayers, one had five employees and one had 11 employees. After the visit, all were grateful for the advice and said that they would consider carrying out the tests in future.

Not many bodyshop managers said that they had had staff who had failed these tests. In one case, however, a member of staff had failed the lung function test and had been referred to the local hospital for follow-up examinations.

7.1.2 Urine tests

From the telephone survey, urine testing was not as common as lung function tests. Overall, only 13 per cent of the 500 respondents said that they carried out urine tests on their sprayers. Around a quarter of medium and large companies said that they carried out these tests, with only four per cent and five per cent of sole traders and small firms saying that they offered urine tests.

Out of the 30 bodyshops visited, 15 offered regular urine tests to their sprayers. Of these, 13 offered the tests annually and two offered the tests every two years: one of these said that this was 'in order to save money'; and the other said that a test conducted had come out clear in 2008 and the bodyshop had then taken the decision to conduct the tests every two years, although it would reconsider doing them annually. A further bodyshop said that it was going to introduce urine tests shortly, following advice from its external contractor.

The urine testing was carried out by external contractors, who were usually under contract to carry out all health surveillance at the bodyshop.

The remaining 14 bodyshops did not offer urine testing to their sprayers. They were not aware of the advisability of conducting the tests and those who had contracts for health surveillance with external contractors said that their contractors had not told them about these tests. The advice on urine testing given to bodyshops by contractors seemed to be uneven – in some cases, they advised bodyshop managers of the advisability of urine testing, and in some cases they did not.

As with the technical checks, most bodyshops who used a contractor to carry out health surveillance trusted their judgement as to whether the tests carried out were in compliance with regulations. Many bodyshop managers were grateful to have been alerted to the advisability of conducting regular urine tests.

7.2 KEEPING RECORDS

All the 30 organisations that were visited kept records of health surveillance, if carried out, and liability insurance details. However, there were wide differences in the organisation of the records and how far back they went. In some of the larger organisations, the records were kept at head office, while in the smaller independent organisations, they were kept by the bodyshop manager.

Knowledge about how long the records should be kept for was mixed: many bodyshop managers were aware of the requirement to keep them for 40 years, including for employees who had left. Some were not aware that they needed to keep them for 40 years.

Bodyshop managers generally also tended to be aware of the requirement to keep liability insurance records. Again, in the larger organisations, records were kept by head office, while in the smaller ones, the record-keeping tended to be slightly more ad-hoc, with some managers not keeping records beyond around eight years. However, they would usually know the company with whom they had taken out insurance.

7.3 CHAPTER SUMMARY

This chapter has examined the incidence of health surveillance, focusing on lung function tests and urine tests, in addition to practice around record keeping.

- Bodyshop managers tended to contract out their health surveillance to external providers, and would therefore trust their judgement on what was needed and/or advisable for health reasons.
- Larger employers were more likely than smaller bodyshops to offer a range of health tests to their employees. Many employers also offered tests to non-sprayers.
- A majority of employers from the telephone survey offered regular lung function tests. Overall, larger employers were overwhelmingly more likely to provide lung function tests to new employees, and to update them on a regular basis thereafter. The majority of the 30 bodyshops that were visited also carried out annual lung function tests on their sprayers.
- Urine testing was less common. Overall, only 13 per cent of the telephone survey respondents said that they carried out urine tests on their sprayers. However, half of the 30 bodyshops visited offered regular urine tests to their sprayers, and one intended to introduce the tests.

- The advice from external contractors on urine testing given to bodyshops seemed to be uneven – in some cases, they advised bodyshop managers of the advisability of urine testing, and in some cases they did not.
- All bodyshops visited kept records of health tests if they were carried out. Bodyshops also kept records of Employer Compulsory Liability Insurance.

8 PERCEPTION OF RISK

This chapter examines the perception that managers and sprayers hold of the risks associated with isocyanate paints. It also looks at managers' and sprayers' experience of work-related ill-health and the impact that this may have had on behaviour. In this chapter, most of the data is drawn from the bodyshop visits.

8.1 VIEWS OF MANAGERS

The view of the MVR FOD focus group attendees in October 2009 was that there are different levels of awareness of the risks of isocyanates across the sector and that this did not necessarily depend on the size of the organisation. However, the group felt that the smaller organisations did not have the facilities and resources of their larger counterparts when dealing with health and safety issues. This view is supported by this research, which found that there is little correlation between size of organisation and health and safety practices, procedures and awareness, although in some of the very small bodyshops visited, awareness of health and safety was not good.

From the telephone survey, the vast majority of employers felt that their employees were aware of the dangers of using the paints, and there was little variation by company size (94 per cent for sole traders, rising to 99 per cent for large companies).

From the bodyshop visits, managers were aware that using isocyanate-based paints involved risks to health, and were aware of the safety procedures that should be put into place and followed when using the paints, with the exception of some of the very small businesses. One manager felt that the sprayers did not take the risks associated with the paints as seriously as he would like.

'In general, how seriously do you think the sprayers take the risks associated with the paints?'

'Not seriously enough. I don't think any of them, any person, takes any risk seriously enough, me included. If I was to go and paint something down there now, I bet you I would still lift my mask up.'

(Bodyshop manager (15+ employees))

However, there was some confusion on occasion about what exactly the dangers were. While some managers were knowledgeable and could make the link between isocyanates and occupational asthma, a number believed that the paints caused cancer.

This was also the view of the MVR FOD focus group attendees, based on their experience. The misconception about cancer appeared to be quite common:

'Unfortunately, I lost one of close friends and I believe that was through painting without a mask. He died of lung cancer about three years ago, so I put the risk in the paint shop right up there with the main risks that we come across in this industry.'

(Bodyshop manager (15+ employees))

One bodyshop manager in a small bodyshop had not been aware that the health danger was asthma, and was not aware that it was the particles rather than the vapour of the paint that can cause the respiratory damage.

When managers were asked what the main health and safety dangers of working in a motor vehicle repair bodyshop were, isocyanates ranked either top or second, behind risks associated with machinery-related accidents.

'I put the risk in the paint shop right up there with the main risks that we come across in this industry.'

(Bodyshop manager (15+ employees))

'The machinery here is hazardous, there are things that can explode and if things aren't handled correctly it could be an absolute death trap ... without a doubt it's a dangerous place, they are the main hazards – the machinery and how it is used. I would probably put isocyanates below machinery, it would probably be machinery at the top, products, lifting.'

(Bodyshop manager (15+ employees))

Some also thought that one of the main dangers was getting the paint on skin, rather than breathing it in, although it should be noted that dermatitis can be caused by contact of the paint with the skin.

'You take it in through your skin, people think you breathe it in but it comes in through your skin. Am I right to say that? No? Oh right, I thought it came in through your pores.'

(Bodyshop manager (15+ employees))

8.2 VIEWS OF SPRAYERS

Sprayers tended to be quicker to cite isocyanate-based paints as the main potential risk to their health, possibly because wearing PPE was such an integral part of the way that they worked with these paints. However, there were also some misconceptions about the dangers of isocyanates among the sprayers. For example, a few thought that one of the dangers was getting the paint on their skin, although they were also aware that the main danger was breathing in the spray mist.

'Chemical inhalation really then, the chemical absorption through your skin, but mainly breathing in.'

(Sprayer (bodyshop with 6-14 employees))

'If you're using isocyanates, it's any orifice, your ears, your eyes and so on.'

(Sprayer (bodyshop with 15+ employees))

'For me personally, it's the paint fumes on the isocyanates, lacquers and primers and stuff like that and dust as well basically and getting it on your hands, for which you have got to be careful wearing gloves and stuff.'

(Sprayer (bodyshop with 6-14 employees))

'The main risks are obviously isocyanates, your breathing, respiratory problems, dust in the environment, noise level with machinery and just the general sort of things in a busy workshop.'

'Do you think isocyanates would be one of the main risks?'

'Oh definitely, yes that would be, for me it would.'

(Sprayer (bodyshop with 6-14 employees))

One sprayer talked about how practice around health and safety for sprayers had changed over the past couple of decades, and welcomed the changes. However, he was more concerned about the fact that the paint would give him a headache rather than the harmful effects of breathing in the spray mist.

'You can't really spray it around in the open air without [protection] because it gives you a thumping head. When I first started 23 years ago there wasn't so much of a thing on isocyanates and then obviously over the years "oh you can't do that" because back then people used to spray in the open shop and as long as it was down the end near the fan, that was good enough. But since about 15 years ago, obviously the health and safety thing kicked in, obviously too many people getting ill with it. Years ago it was literally crack on and we would be priming just down near a fan and I can remember when I first started out just painting in the shop with just a normal cartridge mask on and your head is bumping away and you turn around and you can't see anyone because there is just the over spray around ... you wouldn't think of doing it now.'

(Sprayer (bodyshop with 6-14 employees))

8.3 PREVALENCE OF HEALTH PROBLEMS AND IMPACT OF BEHAVIOUR

Not many of the bodyshop managers and sprayers interviewed knew of anyone who had had health problems related to isocyanate paints. This was relatively surprising, given that the managers had mostly been in the business a long time, often starting out as sprayers themselves.

Nevertheless, one sprayer spoke at length about a family member who had been sensitised and the impact that this had had on his behaviour around health and safety practices and procedures. He spoke of being constantly aware of the dangers of isocyanate paints and doing everything he could to ensure that he was protected. This sprayer said that he took extra precautions, such as waiting longer than the clearance time after spraying.

'My uncle got put into hospital with it you see, he got sensitised he used to be a body shop manager and he can't be anywhere near paint now. If he gets near it he starts choking and coughing ... health and safety always comes first with me because at the end of the day it is no good earning really good money now and in five years time I can't do my job any more.'

(Sprayer (bodyshop with 15+ employees))

One bodyshop manager said that he had known a sprayer who had failed a lung function test and who had changed his working practices and lifestyle as a result.

Both managers and sprayers were asked whether they worried about the health of their workforce or their own health. The general view was that they thought they knew the dangers of isocyanates, and that if they kept to the prescribed health and safety procedures, they would be alright in the longer-term.

There was no marked difference in this respect between the older and the younger sprayers. Those in their 20s said that they recognised the risks, but minimised them. Those in their 40s said that they were careful and did not worry unduly, even though they might not have adhered so strongly to health and safety procedures in their youth.

8.4 CHAPTER SUMMARY

This chapter examined views among managers and sprayers of the risks of working with isocyanate paints. Its main findings are:

- When managers were asked what the main health and safety dangers of working in a motor vehicle repair bodyshop were, isocyanates ranked either top or second, behind risks associated with machinery-related accidents.
- However, there are still some common misconceptions about the precise nature of the dangers of isocyanate paints. A common belief still seems to be that the paints cause cancer, or that the main danger was getting the paint on the skin.
- Sprayers tended to be quick to cite isocyanate-based paints as the main potential risk to their health, as a cause of asthma, but many thought that one of the main dangers was getting the paint on their skin.
- The overall view from sprayers was that they knew the dangers of isocyanates, and that if they kept to the prescribed health and safety procedures, they would not suffer in the longer-term. There was no marked difference in this respect between the older and the younger sprayers.
- Not many of the bodyshop managers and sprayers interviewed knew of anyone who had had health problems related to isocyanate paints. However, some individuals spoke at length about people they had known in the past who had become sensitised.

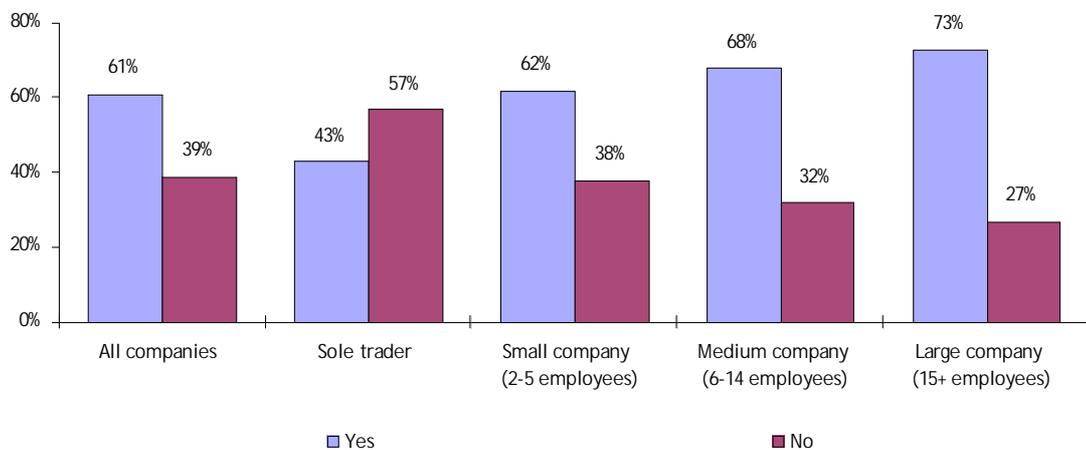
9 AWARENESS OF HSE INFORMATION AND GUIDANCE

In this chapter, we look at the awareness and use of HSE information, advice and guidance for bodyshops that work with isocyanate-based paints. We also ask about attendance at SHADs and usefulness of the SHADs.

9.1 OVERALL AWARENESS

Overall, in terms of contact with the HSE, larger companies were more likely than smaller ones to have had an HSE inspection – 73 per cent of large companies, compared with 43 per cent of sole traders and 62 per cent of small companies. For details, see Figure 9.1 below.

Figure 9.1: Whether bodyshop had ever received an HSE inspection by employer size



Base is all employers (119 sole traders, 158 companies with 2-5 employees, 114 companies with 6-14 employees, 96 companies with 15 or more employees, 14 employers are excluded from this figure as they did not know the answer to the question).

Source: IES/MORI survey of bodyshops 2010

9.2 AWARENESS AND USE OF THE WEBSITE (MANAGERS AND SPRAYERS)

Out of the 30 bodyshops visited, 17 managers said that they were aware of the HSE's guidance for the motor vehicle sector. Of these, 13 said that they had downloaded materials. Others said that they had not, due to pressures of work, or the fact that their health and safety contractors would keep them up to date with anything they needed to know, or tell them of new developments. One manager was not aware that the leaflets and guidance were free.

A total of 15 bodyshop managers were not aware of the HSE's MVR website.

Managers were shown the two HSE posters provided to us by the HSE.¹ Again, awareness was mixed. A couple of bodyshop managers knew them and even had them up in the

¹ 'What an aerosol!. Don't flip up until the air is clear!' and 'Which mask would you prefer? 2-k paints can take your breath away!'.

bodyshop. The majority had not seen them, however, but were happy to take them and said that they would display them.

Few of the sprayers were personally aware of the HSE's MVR website. One admitted that he had never heard of the HSE. Some of the sprayers recognised the posters, usually if they had been displayed at the workplace, or at a previous workplace.

9.3 VIEWS ON THE USEFULNESS OF THE INFORMATION AND GUIDANCE

Bodyshop managers were asked which of the HSE's publications they found most useful. Many said that it was publications on risk assessment and workplace hazards. Some found the posters and leaflets very useful, specifying leaflets on 2-pack paints, air-fed masks and manual handling. Others referred to HSE guidance on issues such as smoking and asbestos. Some said that it was difficult to say definitively, as they tended to look at the HSE website on a need to know basis.

Bodyshop managers were generally under time pressure and found it relatively difficult to make time to research information and guidance on health and safety. However, the managers who had accessed the HSE website had generally positive views about it. Often, their need was for information that was short and to the point.

'[HSE guidance], it's good, it's pretty informative. I quite like bullet points because I kind of like sifting through information rather than reading a lot but they have got case studies, pictures, they lay it on the line, they don't commit to anything directly, they give you a decent time scale to work with. I have never found anything unhelpful and I have never tried to look for something that I couldn't find, you know I have always found information on what I was looking for and if I haven't I have called the helpline and had people call me back or whatever.'

(Bodyshop manager (15+ employees))

'Whatever information I have tried to get has been on the website you know, regarding risk assessments and all that side of stuff. It's all there in fairly plain English, so we understand what to do.'

(Bodyshop manager (6-14 employees))

One manager also made the point that information on health and safety for the sprayers needs to be plain, clear and simple.

'You have got to keep things plain and simple for them, simple as that, if you start to put in a lot of jargon in front of them as we call it then it just wouldn't get looked at.'

(Bodyshop manager (6-14 employees))

Where sprayers were aware of HSE information and guidance, the view was generally positive. Many sprayers expressed the view that it was 'common sense', but agreed in general with the messages contained in the HSE's guidance.

'Some of it is alright, some of it, yeah I totally agree with it ... 2-pack paints, yeah I think everything is about right in there [but] maybe when you are mixing paint wearing goggles, unless you are throwing the paint all over the place I don't think you really need to wear goggles but that's the rule that they have put in and I don't really think it is needed. Water based paints now are washed out straight away really.'

(Sprayer (bodyshop with 6-14 employees))

One common view among sprayers was that their health and safety was their own responsibility: they thought that they knew what to do, and as long as they did this, they would be fine.

'We have had plenty of leaflets and different bits of paperwork to have a look at, but a lot of it is just general common sense really, so from my point of view, as a painter, my health and safety lies with myself and that's it and then I am in the workshop and they have got dust extraction, masks, dust masks, ear muffs, rubber gloves and that is about it really.'

(Sprayer (bodyshop with 6-14 employees))

9.4 ATTENDANCE AT SHADS AND VIEWS ON THEIR USEFULNESS

From the telephone survey, about one-fifth (19 per cent) of organisations reported that they had attended a SHAD. Larger organisations were two to three times as likely to have attended one than smaller organisations: 28-29 per cent of medium and large companies compared with 9 per cent of sole traders and 13 per cent of small companies.

One-third of bodyshop managers – 10 out of the 30 visited – had attended a SHAD. Those who had attended could in general remember it very well and spoke very highly of it. For one manager, the SHAD opened his eyes to a lot of risks: he particularly appreciated practical demonstrations such as how the spray mist behaves in a booth. When he returned to the bodyshop, he was keen to impart this knowledge. Overall, he was very complimentary about the SHAD.

'I thought the SHAD was brilliant – you could not come back and do nothing about health and safety. I can't praise [the HSE] enough for the SHADs. If they had more time to do those, it would really help the industry.'

(Bodyshop manager (15+ employees))

Another bodyshop manager also spoke highly of an HSE SHAD. He took his foreman to the SHAD, on the grounds that if the information were to be disseminated properly to the sprayers, it was better for the foreman to do this than the bodyshop manager.

'I took my foreman painter to the SHAD Day. It's alright me relaying it but it's nothing like him relaying it to his colleagues. We came away with a few posters and a website address.'

(Bodyshop manager (6-14 employees))

All those who had attended SHADs were positive about them. Two bodyshop managers suggested that SHADs should be held for sprayers.

'I think it would be a good idea for [the sprayers] to go to a SHAD – they showed us a car in a perspex box and then they put some smoke into it and then it showed how the smoke vortexed. I think if they actually saw it with their own eyes ... I came back and I went through it with them and I said "you have got to be so, so careful" but if they actually saw it, I think they would remember it. If we ever get a SHAD round here locally or if I could get the HSE to come and do it, I would have one here because it just changed me completely – I didn't realise, you don't do you? You go

along and you do your job but once you see it and it is brought to your attention, and that must be eight or nine years ago now, I have never forgotten it and I think it would be a benefit for all paint sprayers to see that.'

(Bodyshop manager (15+ employees))

Of the 20 bodyshop managers who said that they had not attended a SHAD, in nine of the cases, the managers said that they were not aware that SHADs had taken place. Two bodyshop managers said that they had no time to attend. Out of the 20 who had not attended, four said that they would be interested in attending a SHAD in the future.

From the telephone survey, of those who had not attended a SHAD, 39 per cent had heard of the events being held, and 60 per cent had not. Sole traders were least likely to have heard of them, but other than that there was no linear relationship with company size. The most frequently cited reason for not attending the SHAD was being too busy (44 per cent). Others said that they knew enough already (8 per cent) or that it was not relevant (13 per cent). A handful (six per cent or less) reported that it was too far away, not interesting enough, that the costs were prohibitive, that their business was new and they had not yet had the opportunity, that the day was not well publicised or that they had not been invited.

9.5 OTHER INFORMATION SOURCES

From the telephone survey, trade magazines and information from suppliers were the most frequently cited sources of knowledge. Larger companies were *slightly* more likely than smaller ones to use these sources of information. However, they were *much* more likely to report attending industry training days (eg SHAD) and visiting the HSE website (or using HSE materials).

Other sources of information cited included audits, BSI, consultants, head office, health and safety officers, insurance companies, leaflets and posters, word of mouth, vehicle manufacturers, the Thatcham motor insurance repair research centre, and trade associations (eg MVRA, VBRA). For details of information sources cited by bodyshop managers in the telephone survey, see Table 9.1 below.

Table 9.1: Sources of information used to keep up to date by employer size

| | Sole trader % | Small (2-5 employees) % | Medium (6- 14 employees) % | Large (15+ employees) % | All companies % |
|-----------------|------------------|-------------------------------|----------------------------------|-------------------------------|-----------------------|
| Trade magazines | 73 | 81 | 86 | 90 | 82 |
| Internet | 38 | 51 | 75 | 79 | 59 |

| | | | | | |
|--|-----|-----|-----|-----|-----|
| Training courses | 13 | 23 | 66 | 78 | 42 |
| HSE website/materials | 13 | 30 | 60 | 63 | 40 |
| Industry events (eg SHAD) | 7 | 11 | 38 | 48 | 24 |
| Information from suppliers | 77 | 85 | 91 | 87 | 85 |
| <i>No of responses on which %s are based (N)</i> | 121 | 164 | 116 | 100 | 501 |

Note: Respondents were free to give as many responses as applied to them, therefore the percentages will not sum to 100.

Source: IES/MORI survey of bodyshops 2010

The 30 bodyshop managers visited were asked whether they had a complete set of material safety data sheets for the paints that they used. The majority did (27 out of 30), although one admitted that they were probably not up to date. The majority said that they had the information on a CD, which was available to the sprayers, but as the computer was in the bodyshop office, it was not usual for the sprayers to consult the CD. Nevertheless, one sprayer said that he did consult the computer regularly for information on the paints he used.

‘Yeah, we have got all the information on the computer and everything, data sheets, everything is there. Even if you have got a new product you just go on the computer and all the data sheets are there and it gives you all the information.’

(Sprayer (bodyshop with 15+ employees))

One manager who said that he did not have a complete set of data sheets said that he left it to his sprayers to gather the information they needed on the paints, as they were more computer-literate than him.

Managers tended to rely on a range of sources for their health and safety information. These included trade magazines, such as Bodyshop Magazine and Motor Trader, paint company representatives, and networks within the industry.

When asked which sources were the most useful, many said that the paint company representatives were invaluable as a source of information about the projects, as they would often make regular, sometimes monthly, visits to the site, or visit when new products were launched. Some of the bodyshop managers also cited the HSE as an invaluable source of information.

For some of the larger bodyshops, networking in the sector was a valuable source of health and safety information. For one bodyshop manager, networking within the industry was his main source of information. The brand of car with which he was associated organised weekends away for networking once a year, and health and safety was a part of the programme for these weekends.

9.6 VIEWS ON WHAT THE HSE COULD OFFER ADDITIONALLY

Bodyshop managers were asked whether there was anything else that they need from the HSE in terms of advice and guidance on isocyanates. They found it difficult to think of anything in general. One manager said that it would be useful to attend a dedicated seminar or SHAD to find out where the gaps in his knowledge were.

'That's a difficult one really. I think what I would need to do is go on one of your seminars first before I could answer that, just to see if there are things that we could be doing better than maybe what we are, because sometimes you can think you are really good but there might be something you are weak on. I think if I went on one of the seminars it would probably do me a bit of good.'

(Bodyshop manager (15+ employees))

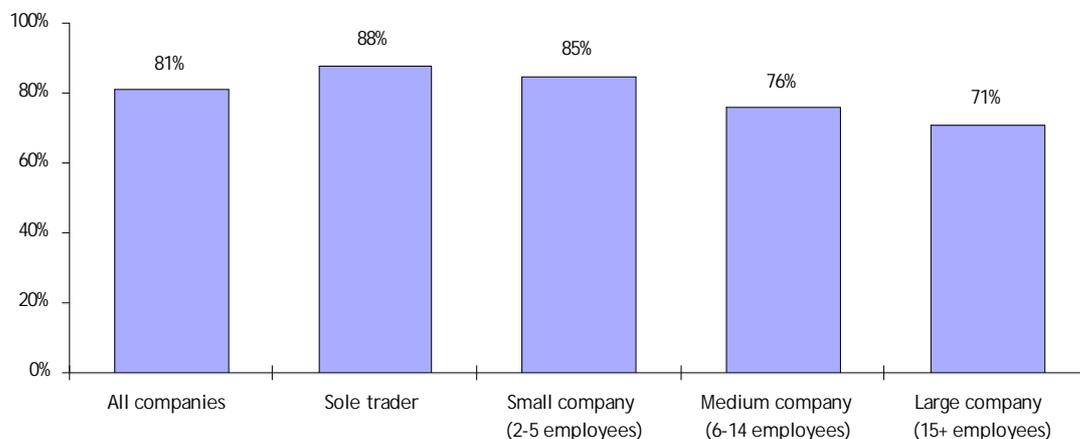
Another bodyshop manager said that he would like to know more about urine testing, as he was not aware of this at the time of the visit.

9.7 FUTURE TRENDS

The 30 bodyshop managers visited were asked about future trends in their industry and gave a range of responses. In terms of the paint they used, the majority thought that they would continue to use isocyanate-based lacquers in the foreseeable future. They knew that water-based lacquers were on the market, but thought that they were inferior to the isocyanate-based lacquers.

From the telephone survey, smaller employers were more likely to feel that isocyanate paints would always be preferred until the finish of other products was improved. Overall, 81 per cent of the 500 managers surveyed agreed with this. In the case of sole traders, the figure was 88 per cent, falling to 71 per cent in the case of managers in large companies of 15 or more employees. For details, see Figure 9.2 below.

Figure 9.2: Proportion of employers agreeing that 'isocyanate-cured coatings will always be preferred until the finish of other paints is improved', by employer size



Base is all employers (121 sole traders, 164 companies with 2-5 employees, 116 companies with 6-14 employees, 100 companies with 15 or more employees).

Source: IES/MORI survey of bodyshops 2010

Many bodyshop managers spoke of being put under cost pressure by insurance companies, although they did not see how they could move away from links with insurance companies, due to the flow of work that insurance contracts guaranteed. Some spoke of being in the middle of the increasing prices of materials and the increasing demands put upon them by insurance companies.

'What we are using now is more expensive than what we used five years ago to actually put on the car, I will give you an example: the paint company we use has just announced that they are putting their products up 10.2 per cent, now we are aren't going to get 10.2 per cent off the insurance companies ... it's so hard to make a margin because insurance companies are squeezing and squeezing.'

(Bodyshop manager (15+ employees))

Others spoke of the challenge that the recession has brought, making it difficult to attract the volume of work. One bodyshop manager thought that people were less inclined to take their car in for repairs at the moment, preferring to drive around in damaged vehicles. Others worried about the raising of the bar concerning standards and accreditation.

'Insurance companies are sending less and less of their work to garages that are not accredited and if you are not accredited these days, you are just not going to get the work any more and I think the company has spent somewhere in the region of probably over a quarter of a million pounds getting people through the training courses that are required. The aim over the next two or three years as far as I am aware is to make sure that all of our technicians are accredited with the right qualifications, we are about 50 per cent of the way here.'

(Bodyshop manager (15+ employees))

9.8 CHAPTER SUMMARY

This chapter has looked at the use of HSE information, advice and guidance in the motor vehicle repair sector, including use of the HSE's MVR website, awareness of HSE leaflets and posters and attendance at SHADs. It also looks at the use of other information sources.

- There was a range of awareness of HSE initiatives. Managers at just over half of the bodyshops visited said that they were aware of HSE advice and guidance for the MVR sector, and half of these managers said that they were aware of the HSE's MVR website.
- Feedback on the usefulness of the information provided for the MVR sector by the HSE was good, although information-gathering was often on a need-to-know basis as bodyshop managers were generally under time pressure.
- Sprayers on the whole tended to be less aware of HSE advice and guidance, and often viewed health and safety practices and procedures as common sense.
- Around one-fifth of the telephone survey respondents and one-third of the bodyshop managers visited had attended a SHAD. Those who had attended could in general remember it very well and spoke very highly of it.
- Of the bodyshop managers visited who had not attended a SHAD, just under half had not been aware of them.
- From the telephone survey, the most frequently cited reason for not attending the SHAD was being too busy. Other reasons given by managers were that they knew enough already, that it was not relevant, it was too far away, not interesting enough, that the costs were prohibitive, that their business was new and they had not yet had the opportunity, that the day was not well publicised or that they had not been invited.
- Trade magazines and information from suppliers were the most frequently cited non-HSE sources of knowledge. Paint company representatives were frequently cited as the most valuable sources of information, as part of their visits to bodyshops.

- When asked about future trends, managers in the telephone survey felt that isocyanate paints would continue to be the preferred paint for the foreseeable future, as the water-based lacquers on the market were, in their view, inferior to the isocyanate-based lacquers.
- Other pressures in the sector included cost pressure from insurance companies and the difficulties caused by the recession.

10 CONCLUSIONS

This research (consisting of a telephone survey of 500 bodyshop managers in the UK and visits to 30 bodyshops in England and Wales, along with a broader review of the literature and available data) enables a picture to be assembled of the current health and safety procedures and practices relating to the use of isocyanate-based paints in the motor vehicle repair sector. Below, we highlight the main issues to emerge from this research and pick out some key points for the HSE to consider in future work in the MVR sector.

10.1 EQUIPMENT

- The standard of equipment used was, on the whole, good: the majority of bodyshops had a purpose-built spray booth in place, with proper ventilation and maintenance procedures in place.
- Awareness of the clearance times of the booths was also generally good, which would point to the fact that HSE awareness campaigns on clearance times have made an impact.
- There seemed to be no general problems around respecting the clearance times of the spray booth, although from the telephone survey, it would seem that this might be an issue in some of the smaller bodyshops.
- There was a lack of knowledge about the dangers of the invisible spray mist – some sprayers believed that it was safe to enter the booth if they could no longer see the spray mist. It would seem that this myth persists despite HSE efforts to counter it.
- The practice of wearing full face air-fed masks was widespread, although there were some views about the relative advantages and disadvantages of full face and half face masks. In general, the younger sprayers – under 40 – tended to wear full face masks but some of the older sprayers preferred half face masks: the main preference appeared to be what sprayers were used to.
- The main disadvantage with full face air-fed masks was visibility, although the sprayers who wore them liked the full face protection that they gave. Those who wore half face masks liked the visibility, but did not like the fact that their face was more exposed to the paint. Visibility in relation to full face air-fed masks has serious health and safety implications if this leads to sprayers lifting their visors (see below).

10.2 HEALTH AND SAFETY PROCEDURES

- Health and safety training and information for sprayers tended to be more structured in the larger bodyshops: in the smaller ones, it was more informal and often left to the common sense of the sprayers.
- The practice of lifting the visor of a full face air-fed mask appears to be commonplace in small and large bodyshops. Sprayers want to check the finish unencumbered by the visor. Managers and sprayers knew that this was not advisable in terms of health and safety, but the sprayers were keen to ensure that the job had been done correctly – a respray would cost time and money. This has serious health and safety implications for sprayers if it takes place on a regular basis throughout their careers.
- Many of the bodyshops visited worked on a bonus system, and it was acknowledged by some managers that this did put some pressure on sprayers to work quickly, although

sprayers in general had no complaints about the system and liked the fact that this enabled them to earn extra money.

- There was acknowledgement by managers and sprayers that some sprayers tended to work for themselves in the evenings or at weekends, although this was usually anecdotal evidence rather than the actual practice of the sprayers interviewed. Nevertheless, if this practice is common, this has health and safety implications for sprayers and implications for the employer, if the sprayer becomes sensitised and tries to claim compensation from the employer.
- Work for insurance companies and dealerships was widespread. It would seem that the main influence of work for insurance companies and dealerships is to drive compliance with health and safety, as these organisations have specific health and safety standards and procedures, to which they require bodyshops to adhere.
- During the course of this research, a minority of very small bodyshops were visited, where health and safety compliance was not good and awareness of the risks associated with isocyanate paints was not high. However, it should be stressed that this was due to a lack of knowledge and information, rather than any deliberate attempt to flout regulations.

10.3 HEALTH SURVEILLANCE

The main conclusions relating to health surveillance are as follows:

- A majority of employers carried out regular lung function tests on their sprayers. Size of company was a significant influence on whether or not lung function tests were offered to sprayers – larger employers were overwhelmingly more likely to provide lung function tests to new employees and to offer them on a regular basis thereafter. It is generally to be expected that larger companies are more organised in terms of their health and safety and testing procedures.
- Regular urine testing was less common, offered by less than one-sixth of telephone survey respondents and half of the bodyshops visited. There was an overall lack of knowledge about the advisability of regular urine testing. Awareness-raising of this issue may improve the situation.
- Bodyshops tend to contract out their health testing to external contractors. They trust the contractors to carry out the test required to ensure compliance with the law. However, it would appear that the advice given by these external contractors can be inconsistent, regarding issues such as the advisability of carrying out urine tests.

10.4 PERCEPTION OF RISK

Managers and sprayers were asked about the main health and safety dangers of working in a motor vehicle repair bodyshop. The main issues relating to perception of risk were as follows:

- Myths about the risks of isocyanates persist. Some bodyshop managers, in large and small companies, thought that the main risk was cancer, while some also thought that one of the main dangers was getting the paint on skin.
- Most of the sprayers were aware of the risk of occupational asthma, although some also cited risks associated with getting paint on the skin and around the eyes.

- This would suggest that not all of the awareness-raising work on the risks of isocyanates is filtering through to bodyshops.

10.5 USE OF INFORMATION, ADVICE AND GUIDANCE

- There was varied levels of awareness of HSE information, advice and guidance among bodyshop managers.
- Use of HSE guidance among managers was usually on a need-to-know basis on the part of managers, as they tended to be under time pressure. SHADs were much appreciated by those who attended, and this seems like a good way of disseminating information and guidance.
- Sprayers tended not be as aware as managers of HSE advice and guidance, usually relying on their manager, or health and safety advisor, if one was in place, or common sense. It seems that it is therefore important to continue to target managers in health and safety campaigns.
- When asked what additional information bodyshop managers would like from the HSE, many found it difficult to suggest anything (probably because they were unfamiliar with the website), although two suggestions were dedicated SHADs and more information on urine testing.

10.6 FUTURE TRENDS

Bodyshop managers often felt under cost pressure and were worried about the future in the context of insurance companies squeezing them on price and the increasing price of materials that they were required to use. Some therefore felt pessimistic about the future, particularly in the light of the current recession, which they thought was affecting customer spending on car repairs.

In terms of the future of isocyanate-based paints, bodyshop managers generally thought that they would continue to use them in the foreseeable future, as alternatives such as water-based paints, could not provide the finish required, and took longer to dry. Therefore, they did not foresee any change in the paints that they would be using in the years to come.

10.7 MAIN ISSUES FOR THE HSE TO CONSIDER

Below, we highlight the main issues to emerge from this research, in order to inform future HSE policy in the MVR sector.

- It is clear from this research that the issue of sprayers lifting their visor after spraying in order to check the finish is a major and fundamental problem, and one that is common to all sizes of business in the sector, not just small businesses. HSE might want to consider how to address this, as it presents a threat to good health and safety practices when using full face masks. Areas to explore might include the use of half face masks, whether the visibility of full face masks can be improved, whether booth lighting can be improved in order to increase visibility, or whether it is possible to redesign the visors to boost air flow over the face when the visor is lifted.
- There is continuing evidence of misconceptions about the main risks of working with isocyanate paints, which supports the HSE's earlier findings. Some bodyshop managers and sprayers still believe that the paints can cause cancer or that they can cause asthma through entering the pores of the skin. The HSE might want to focus further on targeting the eradication of those myths during future information campaigns.

- From this limited research, which brought us into contact with a small number of small bodyshops that do not have good health and safety procedures in place, it was clear that this was to some extent due to a lack of information and knowledge and lack of funds rather than a wilful desire to skimp on health and safety. More targeting of information and advice to very small companies might improve the situation. Larger bodyshops know where the small bodyshops are located. There is also an enforcement option for the HSE to consider, as regulatory actions can often carry a strong message throughout an industry that non-compliance is not an option.
- Bodyshops tend to rely on external contractors to carry out technical testing and health testing. They rarely question what these external contractors do, trusting them to do everything to ensure that they comply with the law. It might be worth targeting information at these external contractors in order to ensure that they are offering correct advice and guidance to bodyshops.
- The SHADs that the HSE held in the MVR sector were well-received. This appears to be an effective way of communicating health and safety issues to all but the smallest bodyshops in the sector. The latter cannot afford a day away from their businesses. Overall, there appears to be a willingness to comply with health and safety regulations and implement good practice and procedures around the use of isocyanate paints. The overwhelming impression was that people want to be told what to do, and will then go and do it.

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APPENDIX 1: DETAILS OF TELEPHONE SURVEY AND BODYSHOP VISITS SAMPLE

Table A1.1: Telephone survey final sample status

| | Total sample | % Total sample | With outcome | % with outcome |
|---|---------------------|-----------------------|---------------------|-----------------------|
| Achieved interviews | 502 | 17.3 | 502 | 39.2 |
| Unused | 583 | 20.1 | n/a | |
| Bad number/no answer | 689 | 23.8 | n/a | |
| Over-quota/not required | 1 | 0.0 | n/a | |
| Appointments made but unused | 603 | 20.8 | 603 | 47.1 |
| Refusal due to company policy | 4 | 0.1 | 4 | 0.3 |
| Refusal by respondent | 127 | 4.4 | 127 | 9.9 |
| Respondent quit interview | 33 | 1.1 | 33 | 2.6 |
| Other refusal | 11 | 0.4 | 11 | 0.9 |
| Ineligible - screened out during questionnaire | 312 | 10.8 | n/a | |
| No eligible respondent available during fieldwork | 28 | 1.0 | n/a | |
| Other ineligible | 2 | 0.1 | n/a | |
| Total | 2,895 | 100 | 1,280 | 100 |

Table A1.2: Bodyshops visited by geographical location

| Region | N |
|---------------|-----------|
| North | 12 |
| Midlands | 7 |
| South | 11 |
| Total | 30 |

Table A1.3: Bodyshops visited by total number of employees

| Number of employees | N |
|----------------------------|------------------|
| 1 only | 3 |
| 2-4 | 5 |
| 6-10 | 8 |
| 11-20 | 7 |
| 21-30 | 4 |
| 31-35 | 2 |
| Over 35 | 1 (80 employees) |
| Total | 30 |

Table A1.4: Bodyshops visited by number of sprayers employed

| Number of sprayers | N |
|---------------------------|-----------|
| 1 | 5 |
| 2 | 8 |
| 3 | 8 |
| 4 | 4 |
| 5 | 3 |
| 6 | 1 |
| 8 | 1 |
| Total | 30 |

APPENDIX 2: TELEPHONE SURVEY QUESTIONNAIRE

ISOCYANATE PAINT USE IN THE MOTOR VEHICLE REPAIR SECTOR (J35958)

MAIN STAGE QUESTIONNAIRE

INTRODUCTION/CONFIDENTIALITY

Good morning / afternoon / evening, my name is ... and I'm calling from Ipsos MORI, an independent research company, on behalf of the Health and Safety Executive. We are conducting a survey in conjunction with the Institute for Employment Studies, about paint use in the motor vehicle repair sector bodyshops. Can YOU pass me onto the best person to talk to about this?

REPEAT INTRODUCTION

The Health and Safety Executive has commissioned this survey to find out more about health and safety practices and information about isocyanate paint use. The results will be used to help them check how effective their recent bodyshop guidance has been and decide whether they need to develop better, more practical and useful guidance for the industry.

I can assure you that all the information we collect will be kept in the strictest confidence, and used for research purposes only. The HSE wants people to be very honest in their answers so no information you give will be passed onto them, or any third party, in a way that you can be identified. This is a totally confidential survey.

SCREENING QUESTIONS

ASK ALL

QA. What sort of paint applications are carried out in your bodyshop premises?

READ OUT. MULTICODE OK

| | | |
|-------------------|---|---------------------------------------|
| Spray | 1 | CONTINUE TO QB |
| Brush | 2 | |
| Roller | 3 | SCREEN OUT |
| None | 4 | |
| Don't know | 9 | SPEAK TO SOMEONE ELSE AND START AGAIN |

ASK IF CODED 1 AT QA

QB. What types of paint do you use in your bodyshop?

DO NOT READ OUT. MULTICODE OK.

PROMPT WHEREVER ISOCYANATES NOT MENTIONED: **Does that contain isocyanates?**

| | | |
|--|---|--|
| Cellulose paints | 1 | SCREEN OUT IF NOT ALSO CODED 4-6 |
| Water based paints | 2 | |
| Two-pack paints (not containing isocyanates) | 3 | |
| Two-pack paints (containing isocyanates) | 4 | CONTINUE TO QC |
| Solvent based (isocyanate-cured) paints | 5 | |
| Water based (isocyanate-cured) paints | 6 | |
| Other (SPECIFY) | 7 | GO TO QBa |
| Don't know | 9 | SPEAK TO SOMEONE ELSE AND START AGAIN |

QBa. Does that contain isocyanates?

| | | |
|-----|---|-------------------|
| Yes | 1 | CONTINUE TO QC |
| No | 2 | SCREEN OUT |

ASK IF CODED 4 -6 AT QB

QC. Can I just check, are you the person with overall responsibility for bodyshop operations?

| | | |
|-----|---|-------------------|
| Yes | 1 | CONTINUE TO QE |
| No | 2 | CONTINUE TO QD |

ASK IF CODED 2 AT QC

QD. Can you tell me who has overall responsibility for bodyshop operations?

| | | |
|------------|---|---|
| Yes | 1 | TAKE NAME, JOB TITLE AND CONTACT NUMBER, THEN ASK TO SPEAK TO THAT PERSON / THANK AND CLOSE |
| No | 2 | THANK AND CLOSE |
| Don't know | 9 | |

ASK IF CODED 1 AT QC

QE. Would you be willing to answer a few questions about isocyanate paints? The interview will take around 15 minutes.

| | | |
|-----|---|-----------------------|
| Yes | 1 | CONTINUE TO QF |
| No | 2 | ARRANGE SUITABLE TIME |

CLASSIFICATION
QUESTIONS

Firstly, some questions about your bodyshop.

ASK ALL

QF. How many people work in your bodyshop premises who are either employed by you or self employed?

ENTER NUMERICAL RESPONSE

Don't know / Refused 9

ASK ALL EXCEPT SOLE TRADERS (ANSWER 1 AT QF)

QG. How many spray painters work in your bodyshop premises who are either employed by you or self employed?

ENTER NUMERICAL RESPONSE

Don't know / Refused 9

ASK ALL EXCEPT SOLE TRADERS (ANSWER 1 AT QF)

QH. How many of your spray painters are self-employed?

ENTER NUMERICAL RESPONSE

Don't know 9

ASK ALL

QI. What type of vehicles does your bodyshop spray?
DO NOT READ OUT. MULTICODE OK.

| | |
|--------------------------|---|
| Passenger cars | 1 |
| Vans | 2 |
| Bus / coach | 3 |
| Vehicles over 7.5 tonnes | 4 |
| Motorbikes | 5 |
| Other | 6 |
| Don't know | 9 |

ASK ALL

QJ. Approximately how many vehicles does your bodyshop spray in an average week?

| | |
|-----------|---|
| 1-10 | 1 |
| 11-20 | 2 |
| 21-50 | 3 |
| 51-100 | 4 |
| 101-200 | 5 |
| 201 - 500 | 6 |
| 501 + | 7 |

ASK ALL

QK. How much, if any, of your body work is from insurance companies?

PROMPT: What percentage is from insurance companies, would you say?

ENTER NUMERICAL RESPONSE %
Don't know 9

ASK IF DO SOME WORK FOR INSURANCE COMPANIES AT QJ

QL. Do the insurance companies specify the paint that you are to use?

PROMPT: Which types do they specify?

MULTICODE OK.

- Yes - Cellulose paints 1
 - Yes - Water based paints 2
 - Yes - Two-pack paints (not containing isocyanate) 3
 - Yes - Two-pack paints (containing isocyanate) 4
 - Yes - Solvent based (isocyanate-cured) paints 5
 - Yes - Water based (isocyanate-cured) paints 6
 - Yes - other (SPECIFY) 7
 - No 8
 - Don't know / Refused 9
-

MAIN QUESTIONS

Now I would like to ask you some questions about spray paint practises at your bodyshop.

ASK ALL

Q1 Thinking about the types of areas you use for

paint spraying...

READ OUT. SINGLE CODE FOR EACH

| | Yes | No | Don't know |
|--|-----|----|------------|
| A A Do you have a <u>spray booth</u>? | | | |
| PROMPT IF NECESSARY: This is a purpose designed and manufactured proprietary spray booth incorporating negative pressure ventilation system and filters – examples include Spraybake / Todd / Spray Shop Engineering / Junair / Bowtherm. | 1 | 2 | 3 |
| B B Do you have a <u>spray room</u>? | | | |
| This is a dedicated room for spraying with one or more extraction ventilation fans. | 1 | 2 | 3 |
| C Do you have any other spray areas? | | | |
| IF YES, SPECIFY WHETHER OTHER AREAS ARE BOOTHS OR ROOMS AND CODE AS RELEVANT. | 1 | 2 | 3 |
| IF ANSWER 'SPRAY BAY' PROMPT: is this a dedicated enclosed room or proprietary spray booth, or is it a more general area? CODE AS RELEVANT. | | | |
| D ASK IF YES (CODE 1) AT (Q1C) | | | |
| And are these other spray areas extracted? | 1 | 2 | 3 |

ASK HAVE SPRAY BOOTH (CODE 1 AT Q1A)

Q1 And how many spray booths do you have?
E

ENTER NUMBER OF BOOTHS:

ASK IF HAS SPRAY ROOM (CODE 1 AT Q1B)

Q2 Thinking about your spray room, is there a pressure gauge or something similar to show that the room is under negative pressure?

SINGLE CODE.

Yes 1

No 2

Don't know 9

ASK IF HAS SPRAY ROOM (CODE 1 AT Q1B)

Q3 Is the air sucked out (extracted) from your spray room?

- Yes 1
 - No 2
 - Don't know 9
-

ASK IF HAS SPRAY ROOM AT (CODE 1 AT Q1B)

Q4 And how often do you change the filter(s)?

DO NOT READ OUT. SINGLE CODE.

- 0-3 months 1
 - 4-6 months 2
 - 7-12 months 3
 - Less frequently 4
 - When the gauge indicates 5
 - Other (SPECIFY) 6
 - Don't know 9
-

ASK IF HAS SPRAY BOOTH (CODE 1 AT Q1A)

Q5 Could you please tell me what health and safety instructions have been given to bodyshop personnel regarding use of the spray booth <or booths>?

DO NOT READ OUT. PROBE WITH: **And what else?** MULTICODE OK EXCEPT 8 AND 9.

- Do not enter booth inside the clearance time 1
- Only enter spray booth within clearance time if wearing appropriate respiratory protection equipment 2
- Purge time required after bake cycle 3

| | |
|---|---|
| Not lifting visor during spraying | 4 |
| Not lifting visor during the clearance time | 5 |
| Basic health and safety training | 6 |
| Other (SPECIFY) | 7 |
| None | 8 |
| Don't know | 9 |

ASK IF HAS SPRAY BOOTH (CODE 1 AT Q1A)

Q6 Now thinking about your spray booth <or spray booths>, is there a pressure gauge or something similar to show that the booth is <or booths are> under negative pressure?

SINGLE CODE.

| | |
|--|---|
| Yes, booth has pressure gauge | 1 |
| Yes, all booths have a pressure gauge | 2 |
| Yes, some but not all booths have a pressure gauge | 3 |
| No booth(s) have a pressure gauge | 4 |
| Don't know | 9 |

ASK IF HAS SPRAY BOOTH (CODE 1 AT Q1A)

Q7 Is the air sucked out (extracted) from your spray booth <or booths>?

| | |
|------------------|---|
| Yes, all booths | 1 |
| Yes, some booths | 2 |
| No, none | 3 |
| Don't know | 9 |

ASK IF HAS SPRAY BOOTH (CODE 1 AT Q1A)

Q8 On average, how often do you change the filter(s) on your spray booth ventilation fans?

DO NOT READ OUT. SINGLE CODE.

| | |
|--------------------------|---|
| 0-3 months | 1 |
| 4-6 months | 2 |
| 7-12 months | 3 |
| Less frequently | 4 |
| When the gauge indicates | 5 |
| Other (SPECIFY) | 6 |
| Don't know | 9 |

ASK IF HAS SPRAY BOOTH (CODE 1 AT Q1A)

Q9 What is the **average** clearance time for your spray booth(s)?

ENTER NUMBER IN MINUTES:

Don't know 9

Q1 Where is the clearance time marked?

0

DO NOT READ OUT. **PROMPT IF NECESSARY: Is that on ALL or SOME access doors? SINGLE CODE.**

On the outside of **ALL** access doors to the spray booth(s) 1

On the outside of **SOME** of the access doors to the spray booth(s) 2

Other (SPECIFY) 3

Not marked 4

Don't know 9

ASK IF HAS SPRAY BOOTH (CODE 1 AT Q1A)

ASK IF HAS SPRAY BOOTH (CODE 1 AT Q1A). REPEAT QUESTION FOR NUMBER OF BOOTHS STATED AT Q1E

Q11 When was the ventilation in the **[first / second / third]** spray booth last thoroughly examined and tested?

ENTER MONTH AND YEAR. IF UNCERTAIN, ENTER AN ESTIMATE AND INDICATE THIS AT Q13B. **PROMPT: Can I just check that this was a thorough examination and test, and not just your regular service and maintenance? SINGLE CODE ONLY**

- Within 1 month 1
 - 1-3 months 2
 - Over 3 months – 6 months 3
 - Over 6 months – 12 months 4
 - 12-14 months 5
 - More than 14 months 6
 - Never 7
 - Don't know 9
-

Now I'd like to ask some questions about respiratory protection equipment that your sprayers may use.

ASK ALL

Q12 Which, if any, of the following types of respiratory protection equipment is used by sprayers?

READ OUT. ROTATE. SINGLE CODE ONLY FOR EACH. IF YES:
And do sprayers use <EQUIPMENT> all of the time or some of the time?

| | | Yes - all of the time | Yes - some of the time | No | Don't know |
|----------|---|--------------------------------|---------------------------------|----|---------------|
| A | A mask with a filter, that sits tightly on the wearer's face (activated charcoal mask) | 1 | 2 | 3 | 4 |
| B | An air fed (A/F) full face mask / visor | 1 | 2 | 3 | 4 |
| C | An air fed (A/F) half mask / visor | 1 | 2 | 3 | 4 |
| D | A dust mask | 1 | 2 | 3 | 4 |
| E | Goggles | 1 | 2 | 3 | 4 |

ASK IF CODED 1 OR 2 AT Q12B OR Q12C

Q13 Where do you store your A/F masks?

DO NOT PROMPT. MULTICODE OK

| | |
|---------------------------|---|
| Storage locker / cupboard | 1 |
| Hang in bodyshop | 2 |
| Hang in spray booth | 3 |
| On bench in bodyshop | 4 |
| On bench in spray booth | 5 |
| In bodyshop office | 6 |
| Other (SPECIFY) | 7 |
| Don't know | 9 |

ASK IF CODED 1 OR 2 AT Q12B OR Q12C

Q14 How frequently is the air supply for your A/F masks tested?

DO NOT READ OUT. SINGLE CODE.

| | |
|-----------------|---|
| Every 3 months | 1 |
| Every 6 months | 2 |
| Every 12 months | 3 |
| Less frequently | 4 |
| Never | 5 |
| Don't know | 9 |

ASK IF CODED 1-4 AT Q14

Q15 Who tests your air supply?

DO NOT READ OUT. MULTICODE OK.

| | |
|---------------------------------------|---|
| Self | 1 |
| In-house health and safety officer | 2 |
| Consultant | 3 |
| Spray booth manufacturer | 4 |
| Paint supplier / spray booth supplier | 5 |
| No-one | 6 |
| Other (SPECIFY) | 7 |
| Don't know | 9 |

ASK IF CODED 1 OR 2 AT Q15

Q16 What is the air supply for your A/F masks tested for?

DO NOT READ OUT. MULTICODE OK.

- | | |
|-----------------|---|
| Carbon Monoxide | 1 |
| Carbon Dioxide | 2 |
| Oil Mist | 3 |
| Air Temperature | 4 |
| Air flow | 5 |
| Other (SPECIFY) | 6 |
| Don't know | 9 |
-

ASK IF CODE 1 OR 2 AT Q12A-E

Q17 What steps, if any, are taken to clean visors or goggles when spraying?

DO NOT READ OUT. MULTICODE OK.

- | | |
|------------------------------|---|
| Leave booth to clean | 1 |
| Tear off strips used | 2 |
| Wipe with a rag | 3 |
| Disposable / rip old one off | 4 |
| Other | 5 |
| None | 6 |
| Don't know | 9 |
-

ASK ALL

Q1 I'm going to read out a series of statements about behaviour in the workplace. I would like to remind you that your answers will be treated in the strictest confidence and it will not be possible to identify you, your organisation or your colleagues from the results.

8

For each statement can you tell me whether you agree or disagree, or neither agree nor disagree?

READ OUT. ROTATE. PROMPT: is that strongly, or tend to (dis)agree?

| | | Strongly agree | Tend to agree | Neither agree nor disagree | Tend to disagree | Strongly disagree | No opinion |
|---|---|----------------|---------------|----------------------------|------------------|-------------------|------------|
| A | During busy periods, it can be difficult to respect spray booth clearance times | 1 | 2 | 3 | 4 | 5 | 6 |
| B | Sprayers are aware of the dangers of isocyanates | 1 | 2 | 3 | 4 | 5 | 6 |
| C | People in this industry use non-compliant coatings because they are cheaper | 1 | 2 | 3 | 4 | 5 | 6 |
| D | Wearing proper protective equipment, such as visors, can get in the way of doing a good job | 1 | 2 | 3 | 4 | 5 | 6 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| E | Insurance company work puts sprayers under pressure to do the job quickly | 1 | 2 | 3 | 4 | 5 | 6 |
| F | Employed sprayers often work on a self-employed basis during evenings and weekends | 1 | 2 | 3 | 4 | 5 | 6 |
| G | Isocyanate-cured coatings will always be preferred until the finish of other paints is improved | 1 | 2 | 3 | 4 | 5 | 6 |

| |
|---------------------|
| HEALTH SURVEILLANCE |
|---------------------|

ASK ALL

Q19 What, if any, health checks are provided for your bodyshop sprayers?

DO NOT PROMPT. MULTICODE OK.

- Lung 1
- Urine 2
- Dermatitis 3
- Vibration white finger / Hand arm vibration 4

| | |
|-----------------|---|
| Hearing | 5 |
| Other (SPECIFY) | 6 |
| None | 7 |
| Don't know | 8 |

ASK ALL

Q20 Are sprayers given lung function tests when they begin working for your bodyshop?

DO NOT READ OUT. SINGLE CODE.

| | |
|------------|---|
| Yes | 1 |
| No | 2 |
| Don't know | 9 |

Q21 ASK IF CODED 1 AT Q20: After their initial lung function test, how frequently, if at all, are sprayers given lung function tests?

ASK IF CODED 2 OR 9 AT Q20: How frequently, if at all, are sprayers given lung function tests?

DO NOT READ OUT. MULTICODE OK, BUT CAN ONLY CODE 1 OF 3-9

| | | |
|-----------------------------|---|------------------|
| 6 weeks after starting work | 1 | |
| Every 6 months | 2 | |
| Every 12 months | 3 | SINGLE CODE ONLY |
| Less frequently | 4 | |
| Don't know | 9 | |

ASK ALL

Q22 What, if any, health checks are provided for other bodyshop workers?

DO NOT PROMPT. MULTICODE OK.

| | |
|-----------------|---|
| Lung | 1 |
| Urine | 2 |
| Hearing | 3 |
| Other (SPECIFY) | 4 |
| None | 5 |
| Don't know | 6 |

ASK ALL

Q23 Have you ever had an HSE (Health and Safety Executive) inspection?

SINGLE CODE.

| | |
|------------|---|
| Yes | 1 |
| No | 2 |
| Don't know | 9 |

| |
|---------------------------|
| SOURCES OF INFORMATION |
|---------------------------|

ASK ALL

Q24 A. Which, if any, sources of information do you use to keep yourself up-to-date with new equipment and practices in the bodyshop sector?

DO NOT PROMPT. MULTICODE OK.

B. FOR THOSE NOT MENTIONED AT 24A: And do you use...
READ OUT

| | Unprompted | Prompted |
|------------------|------------|----------|
| Trade magazines | 1 | 1 |
| Internet | 2 | 2 |
| Training courses | 3 | 3 |

| | | |
|--------------------------------|---|---|
| HSE website/materials | 4 | 4 |
| Industry events e.g. HSE SHADs | 5 | 5 |
| Information from suppliers | 6 | 6 |
| Other (SPECIFY) | 7 | 7 |
| Don't know | 9 | 9 |

ASK ALL

Q25 Do you recall seeing ...?

READ OUT. SINGLE CODE ONLY FOR EACH

ROTATE B AND C

| | | Yes | No | Don't know |
|---|---|-----|----|------------|
| A | Any HSE leaflets or posters about spray paint use | 1 | 2 | 3 |
| B | A photograph of sprayer lifting his visor with the text 'What an aerosol! Don't flip until the air is clear!' | 1 | 2 | 3 |
| C | One photograph of sprayer working with full A/F mask and a second photo of a male in a hospital bed with an oxygen mask with the text ' Which mask would you prefer? 2-K paints can take your breath away!' | 1 | 2 | 3 |

ASK ALL

Q26 Do you have access to the internet?

SINGLE CODE.

| | |
|------------|---|
| Yes | 1 |
| No | 2 |
| Don't know | 9 |

ASK IF HAVE ACCESS TO INTERNET (CODE 1 AT Q26)

Q27 Is that at home, at work, or both?

SINGLE CODE.

| | |
|--------------------|---|
| Home | 1 |
| Workplace | 2 |
| Home and workplace | 3 |
| Don't know | 9 |

ASK IF HAVE ACCESS TO INTERNET (CODE 1 AT Q26)

Q28 Have you downloaded any leaflets, booklets or information sheets from the HSE's website that relate to bodyshops and two-pack paints?

SINGLE CODE.

| | |
|------------|---|
| Yes | 1 |
| No | 2 |
| Don't know | 9 |

ASK IF DOWNLOADED INFORMATION (CODE 1 AT Q28)

Q29 Which leaflets, booklets or [information sheets](#), if any, did you find most useful?

OPEN END.

ENTER NAME(S)

| | |
|------------|---|
| Don't know | 9 |
|------------|---|

ASK IF DOWNLOADED INFORMATION (CODE 1 AT Q28)

Q30 What were the main messages that you took from these [letters, booklets for information sheets](#)?

OPEN END.

ENTER RESPONSE

| | |
|------------|---|
| Don't know | 9 |
|------------|---|

ASK ALL

Q31 Which, if any, trade associations are you a member of?

DO NOT READ OUT. MULTICODE OK.

| | |
|---|---|
| The Vehicle Builders and Repairers Association (VBRA) | 1 |
| Retail Motor Industry Federation (RMIF) | 2 |
| Motor Vehicle Repairers Association (MVRA) | 3 |
| Automotive Distribution Federation (ADF) | 4 |
| Institute of the Motor Industry (IMI) | 5 |
| Scottish Motor Trade Association (SMTA) | 6 |
| Society of Motor Manufacturers and Traders Limited (SMMT) | 7 |
| Other (SPECIFY) | 8 |
| None | 9 |
| Don't know | 0 |

ASK ALL

Q32 The HSE held Safety and Health Awareness Days (SHADs) for the motor vehicle repair sector in 2006 and 2007 and most recently in March last year. Have you ever attended any Safety and Health Awareness Days?

SINGLE CODE.

| | |
|------------|---|
| Yes | 1 |
| No | 2 |
| Don't know | 9 |

ASK IF CODE 2 OR 9 AT Q32

Q33 Before today, had you ever heard about them (the Safety and Health Awareness Days) being held?

SINGLE CODE.

| | |
|------------|---|
| Yes | 1 |
| No | 2 |
| Don't know | 9 |

ASK IF CODE 1 AT Q33

Q34 Why did you not attend?
MULTICODE OK

| | |
|------------------------|---|
| Too busy | 1 |
| Too far away | 2 |
| Not interesting enough | 3 |
| Know enough already | 4 |
| Not relevant | 5 |
| Other (SPECIFY) | 6 |
| Don't know | 9 |

ASK ALL

Q35 The Institute for Employment Studies (IES) is conducting further research on this topic in the next four months and would like to talk to some organisations in more detail about some of the issues we have talked about today. Would you be willing for Ipsos MORI to pass your contact details on to IES in order for them to approach you about this research? They would offer you £50 as a thank you for taking part in the further research.

INTERVIEWER NOTE: RESPONDENTS WILL ONLY BE RECONTACTED BY IES FOR THE PURPOSES OF WORK RELATED TO THIS RESEARCH AS A RESULT OF AGREEMENT. SINGLE CODE ONLY.

| | |
|------------|---|
| Yes | 1 |
| No | 2 |
| Don't know | 9 |

THANK AND CLOSE

END

APPENDIX 3: PRO-FORMA AND DISCUSSION GUIDES FOR THE BODYSHOP VISITS

| | Question | Purpose | Comments |
|---|---|--|----------|
| | Business Type and Size | | |
| 1 | Number of people working in the bodyshop premises? | To determine size of business and number at risk. | |
| | | | |
| 2 | Number of Spray Painters? Employed? Self-employed? | To determine extent of employers' control of workshop practices. Please note that employers who control the work of self-employed people are in effect their employer and therefore legally responsible. | |
| | | | |
| 3 | Type of Work and number of vehicles Passenger cars? Vans? Bus/Coach? Vehicles over 7.5 tonnes (HGVs)? | To indicate amounts of paint used and likely exposure risks. | |
| | | | |
| 4 | Does the bodyshop require a permit from the local authority to operate under Secretary of State's Guidance PG6/34 a or b? | To indicate whether the bodyshops is using more or less than one tonne of solvent a year. | |
| | | | |
| 5 | How many spray booths, spray rooms or spray spaces are available for use? | To indicate the potential for exposure to risks. | |
| | | | |
| | Maintenance of spray booths and equipment | | |
| 6 | Are the spray booths, rooms or | To assess awareness of risk | |

| | | | |
|----|---|---|-----------------|
| | spaces equipped with functioning gauges to measure room pressure? | of leakage from the spraying area. | |
| | | | |
| 7 | Do the rooms operate at positive or negative pressure? | | |
| | | | |
| 8 | What sort of paint applications are carried out (e.g. spray, brush or roller)? | To assess what activity is likely to occur outside the booth. | |
| | | | |
| 9 | Does any spraying take place outside the booth/room/ space? | | |
| | | | |
| | Question | Purpose | Comments |
| | | | |
| 10 | How often are the spray booth/room/space air filters changed? | To assess level of maintenance undertaken. | |
| | | | |
| 11 | When were the air filters last changed? | | |
| | | | |
| 12 | Has the spray booth/room/space clearance time been established? | To assess the extent to which respect for the clearance time has been embedded in the activity. | |
| | | | |
| 13 | Is the clearance time marked on the outside of all doors to the spray booth/room/space? | | |
| | | | |
| | | | |
| 14 | What procedures are in place relating to bodyshop personnel entering the spray booth/room/space following spraying? | To find out whether clearance times are respected and appropriate respiratory protection is worn. | |
| | | | |
| | | | |

| | | | |
|----|---|--|-----------------|
| 15 | When was the spray booth/room/space ventilation last thoroughly examined and tested? | To find out whether it was in the past 14 months. Key COSHH requirement. Many will have had it serviced but not 'examined' as per COSHH. | |
| | | | |
| 16 | Is the booth/room/space equipped with an over-pressure shut down facility? | To assess level of sophistication of facility. | |
| | | | |
| 17 | What type of respiratory protection equipment is used by sprayers? (Full face A/F visor, A/F half mask, dust mask) | To gauge awareness of the importance of the correct use of breathing apparatus. | |
| | | | |
| 18 | What system is in place for the sprayer to leave or enter the booth wearing an air fed mask during the clearance time? | | |
| | Question | Purpose | Comments |
| 19 | What sort of clean storage is available for A/F masks? | | |
| | | | |
| 20 | Do the sprayers have a compressed air supply pipework that feeds air both to the spray gun and their breathing apparatus facepiece? | To assess the understanding of the importance of a clean supply of air at the correct pressure to the mask. | |
| | | | |
| 21 | If not, what steps are taken to ensure that the flow of air to the mask is maintained at the recommended pressure from a compressed air system with multiple points of consumption? | | |
| | | | |
| 22 | How frequently are the air supply lines and couplings to the breathing apparatus facepiece checked for leakage and damage? | | |
| | | | |

| | | | |
|----|--|--|----------------|
| 23 | How far is the inlet air feed to the air compressor from the outlet exhaust from the booth or other source of air contamination? | | |
| 24 | How frequently is the quality of the air supply to the sprayers' masks checked for water vapour, carbon monoxide, carbon dioxide and oil mist? | | |
| 25 | How long is allowed for the booth/room/space air to be purged after a bake cycle before entering the area without A/F masks? | Control system to limit exposure from the bake cycle. | |
| 26 | If sprayers are wearing half-mask air-fed devices, how often are they checked to ensure a good fit and whose responsibility is it to do this? | To gauge an awareness of specific practices and responsibilities. | |
| 27 | What instructions have been given to sprayers about cleaning of visors to avoid the need to lift them? | | |
| 28 | Do sprayers lift their visors in the booth ? | | |
| | Question | | Purpose |
| 29 | What type of spray guns do you use? | HVLP guns reduce the generated spray solids around the sprayer by a factor of two or more. | |
| | Health Surveillance | | |
| 30 | How frequently are sprayers given lung function tests? | To assess health surveillance practices. | |
| 31 | Are other bodyshop workers | | |

| | | | |
|----|---|--|-----------------|
| | offered lung function tests? | | |
| | | | |
| 32 | Are all sprayers given an annual urine test for isocyanate exposure? | | |
| | | | |
| 33 | What health surveillance records do you keep? | To determine awareness of the importance from both a legal and business standpoint of the maintenance of records for future reference and litigation purposes. | |
| | | | |
| 34 | For how long do you keep them? | | |
| | | | |
| 35 | Do you keep a record of the insurers providing Employers National Insurance cover? | | |
| | | | |
| 36 | How far do these records go back? | | |
| | | | |
| | Sources of Information | | |
| 37 | What sources of information do you have to keep yourself up-to-date with new equipment and practices in the bodyshop sector? | Exploring the level of awareness of information sources and the use made of them. | |
| | | | |
| 38 | Which source of information do you value most? | | |
| | | | |
| 39 | Do you have access to the internet? | | |
| | | | |
| 40 | Have you looked at and downloaded any of the HSE's leaflets, booklets and information sheets which relate to bodyshops and two-pack paints in particular? | | |
| | Question | Purpose | Comments |
| 41 | Which of the HSE's | | |

| | | | |
|----|---|---|--|
| | publications did you find most useful? | | |
| | | | |
| 42 | What information have you passed over to your sprayers? | | |
| | | | |
| 43 | What information about two-pack paints do you get from your suppliers? | | |
| | | | |
| 44 | Do you have a complete set of Material Safety Data Sheets for the paints you use? | | |
| | | | |
| 45 | Did you attend one of the HSE's Safety and Health Awareness Days (SHADs), or if not are you aware that they were held and what they achieved? | | |
| | | | |
| | Economic Trends | | |
| | | | |
| 46 | Why do you use two-pack paints? Are there any problems with using two-pack paints? | To tease out the cost and performance issues which underpin the use of isocyanate cured finishes. | |
| 47 | If there were safer but more expensive finishes would you use them in preference to the isocyanate cured coatings? | | |
| 48 | Do the insurance companies specify the materials to be used? | | |
| 49 | Have you ever used non-compliant coatings? What are the reasons for using non-compliant coatings? | | |
| | | | |

DISCUSSION GUIDE FOR EMPLOYERS (BODYSHOP VISITS)

Background

1. Could you tell me a little about your organisation and what you do? How many people do you employ? Do your workers use isocyanate paints in your work? How many staff do you have working with these paints? How experienced are they? *probe: how, what processes, how much is this part of the company's work? Also the type of workforce they have, their ages and experience levels in the industry.*

Health and safety

2. What do you think are the main risks involved in your job overall? *note how high isocyanates rank but don't probe particularly on isocyanates at this stage*
3. In general, what, if any, health and safety issues or difficulties affect your paint sprayers? *probe: time pressure, pressure to do a good job rather than think about health and safety, other practical issues, personal (eg health) issues, problems with equipment, paints, etc.*
4. How seriously do you think workers take the risks associated with isocyanate paints? *Probe for how they respond the guidelines and procedures.*
5. What kind of health and safety guidance do you have in place for you/your staff? *Probe for guidelines, training/supervision, whether there is a specific named individual with health and safety responsibilities.*
6. What kind of health and safety procedures do you have in place? *probe for best practice, eg booth clearance times, mask maintenance/usage (ie not lifting the visors while spraying), making sure the masks fit correctly, taking regular breaks, storing equipment*
7. How aware do you think your staff are of the potential health risks associated with isocyanates? What is your opinion on whether they follow safety procedures?
8. Which aspects of health and safety legislation do you think your staff would find most difficult to follow? *ie lifting visors to check the finish, not waiting for the clearance time to finish.*

Why do you think this is? *(probe for time pressure, equipment uncomfortable)*

9. How aware are you of HSE guidance for paint sprayers? *(Interviewer to show leaflets/guidance and ask about each one). Also ask whether the interviewee has seen the HSE MVR website. What do you think about the guidance that the HSE puts out in this area? Probe for whether they think that it is comprehensive/useful or not. What else would they want to know?*
10. How aware would you say that your staff is of HSE health and safety guidance for paint sprayers?
11. Do you carry out any kind of contract work, such as for taxi firms or insurance companies? What, if any, are the issues this raises compared to other work? *Probe for whether there is any pressure to get through work quickly, low cost, etc.*
12. Do you think that any sprayers work for themselves or other bodyshops during evenings and weekends? What, if any, are the differences in safety procedures during this time? *probe for exposure to risk, lack of equipment, inadequate premises, time/cost pressures.*

13. What experience have you had of workers who have had health problems related to work? *Ask in general, but also probe about asthma.*

Final questions

14. What, in your view, are the main challenges for your business in the future? *Examples might include the substitution of isocyanate paints by water-based paints, economic issues, further competition on price, specific issues for SMEs, financing purchases of equipment (ie no access to loans)*

15. Anything else that you would like to add?

Thank you very much for your time.

DISCUSSION GUIDE FOR EMPLOYEES (BODYSHOP VISITS)

Background

1. Could you tell me a little about your role here and how long you have worked here. Do you use 2-pack, or 2-K paints in your work? *probe: how, what processes, how much is this part of your work?*

Health and safety

2. What do you think are the main risks involved in your job? *note how high isocyanates rank but don't probe particularly on isocyanates at this stage*

3. What, if any, difficulties do you face when spraying? *probe: time pressure, pressure to do a good job rather than think about health and safety, being unsure about the health and safety issues around spraying, other practical issues, personal (eg health) issues, problems with equipment, paints, etc.*

4. What, if any, personal protective equipment do you use? *Probe for: air-fed masks, other masks, goggles, whether they have a visor.*

For each item, follow up with:

4A. How easy they are to use? How, if at all, do they affect your ability to do the job?

One thing we know is that sprayers often don't like air-fed breathing apparatus with visors because they obscure their vision particularly at the end of spraying when they are trying to assess paint film thickness and coverage etc. Be mindful of this when you ask your questions.

5. How are the masks maintained/cleaned? *Probe for how often, whether they are professionally cleaned, how they are stored, whether they are tested for function.*

6. What health and safety information about your job have you had from your employer? *Probe for guidelines, whether there is a specific named individual with health and safety responsibilities.*

If there are guidelines ask:

6A. How good, useful or easy to understand is/was this guidance?

7. What kind of health and safety procedures are in place? *probe for examples of best practice, eg booth clearance times, mask maintenance/usage (ie not lifting the visors)*

while spraying), making sure the masks fit correctly, taking regular breaks, storing equipment.

8. What, if any, do think are the health risks attached to working with 2-pack or 2-K paints? *probe for whether they are worried about occupational asthma or more general respiratory problems.*
9. Do you understand health safety legislation relating to working with 2-pack paints? *probe also for whether they think the company follows health and safety legislation or not, and encourage them to cite examples.*
10. Which, if any, safety procedures do you find difficult to follow? *probe for lifting visors to check the finish, not waiting for the clearance time to finish.*

If do experience some difficulties, ask:

- 10A. What are the reasons for this? *(probe for time pressure, equipment uncomfortable)*
11. Have you seen any HSE guidance for paint sprayers? *(Interviewer to show leaflets/guidance and ask about each one).* What do you think about the guidance that the HSE puts out in this area? *Probe for whether they think that it is comprehensive/useful or not. What else would they want to know?*
12. Do you carry out work for the insurance industry? What, if any, are the issues this raises compared to other work? *Probe for whether there is any pressure from insurance companies to get through work quickly, low cost, etc.*
13. Do you, or anyone you know, work for yourself during evenings or weekends as a paint sprayer? How different would you say your/their approach to health and safety is when you're working in this way? *Restate confidentiality here – their boss will not know what they say. Probe for exposure to risk, lack of equipment, inadequate premises, time/cost pressures.*
14. Have you ever suffered from health problems that you think might be related to your work? Have any of your colleagues suffered from health problems that were related to their work? *Ask what the problems were and probe for any respiratory problems.*
15. How much do you worry about occupational asthma or other health risks at work?

Thank you very much for your time.

Determining current health and safety practices, awareness of HSE initiatives and economic trends in relation to isocyanate paint use in the motor vehicle repair sector

This report contains the main results of research carried out for the Health and Safety Executive (HSE), by the Institute for Employment Studies examining health and safety practices and procedures in relation to the use of isocyanate-based paints in the motor vehicle repair (MVR) sector. The main objective of this research was to determine current health and safety practices in the motor vehicle repair sector in relation to the use of isocyanate paint spray, focusing in particular on the use of masks and the use of spray booths. The intention was to gather data about practice, in order to gain a view of the overall state of play in relation to the health and safety practices that determine isocyanate use in the sector. The intention was that this will, in turn, make it possible and viable for the HSE to develop a baseline for targeting future embedding activity.

The report is based on a telephone survey of 500 motor vehicle repair bodyshops and visits to 30 bodyshops, during which face-to-face interviews were carried out with bodyshop managers and sprayers.

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