

CS SPRAY: INCREASING PUBLIC SAFETY ?

A REPORT BY

THE POLICE COMPLAINTS AUTHORITY

March 2000

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INTRODUCTION

In August 1996 the Chief Constables of police forces in England and Wales were given the go ahead to introduce CS spray into their forces. This followed trials earlier in the year which had identified no significant problems. It was believed that the spray was a safer option, both for the public and for the police, than the use of batons.

Giving his backing to the initiative, the then Home Secretary the Rt. Hon. Michael Howard said that the spray was a “dramatic improvement in police protective equipment.... presenting no serious risk to health”. The decision was a controversial one. To some it was yet another worrying step towards American, military-style policing. There were also very real concerns about the safety of and health risks attached to the use of CS spray. These concerns were heightened by the death earlier in 1996 of a young man in London called Ibrahima Sey. Mr Sey had been sprayed with CS while on his knees and handcuffed. It was feared that the spray had caused or contributed to his death.

By October 1998 all but three of the 43 forces in England and Wales had introduced the spray. The Police Complaints Authority had been recording all complaints about the use of CS spray since its introduction. We believed it was time to look in more depth at the use of the spray by the individual forces. We had already begun to notice some interesting trends in the complaints. We wondered why some forces seemed to be attracting more complaints than others.

Overall, we were concerned to know whether CS spray was turning out to be safe and effective and whether the concerns about health risks had been reflected in the complaints that we had received. By looking at the training and guidance provided by individual forces, we hoped to find pointers towards best practice. By examining in depth our complaints we hoped to learn what precise factors upset, concerned and angered members of the public about the use of CS spray.

The starting point of our study was that CS spray is potentially a real asset to safer policing, provided it is used appropriately. However the physical effects of CS spray are necessarily unpleasant and distressing. The law makes it clear that the use of the spray, as with any use of force by the police on the public, must be reasonable in the circumstances. In practice this means that every use of the spray is finally a matter of judgement for the individual officer. The recommendations of this report are directed towards the better, safer, lawful use of CS spray.

CHAPTER 1 – METHODOLOGY

This research project is based on two main sources of information. The first is an in-depth analysis of every fully investigated complaint about the use of CS spray for a period of a year beginning in November 1998 and ending in October 1999. The second was a questionnaire sent to all police forces in England and Wales asking for information about their training and general use of CS spray. In addition we have drawn on statistics provided for us by HMIC (Her Majesty's Inspectors of Constabulary) and information provided for us by the ACPO (Association of Chief Police Officers) Self Defence, Arrest and Restraint Committee.

Copies of the Complaint Analysis Form and the Force Questionnaire are attached at appendices 2 and 4.

1. Complaint Analysis Form

The complaint analysis form set out to identify key areas of concern or interest. First and foremost we looked for the incidence of serious injury complained of and also whether there was any link between this and the range at which the CS spray had been used. Officers are advised that the safest range in which to use the spray is between 1-5 metres and to use the spray within 1 metre could cause harm. We also looked at whether the use of the spray was effective because research has shown that CS spray does not work on everyone. We looked to see whether the complaints reflected a lack of appropriate medical attention or after care, and also whether others were affected adversely by the CS spray including the public and the police and whether they too received appropriate after care.

We looked at a number of key areas around the use of the spray. Firstly, we were keen to identify whether the complainant had been detained or restrained or indeed was in handcuffs at the time the spray was used. We were also interested in precisely where the spray was used. Was it inside or outside? Was it in a domestic situation or in a public order situation? Was it in an enclosed space, for instance in a car or in a cell?

We were interested in whether alcohol and/or mental health was an issue, and finally, we were concerned to record those occasions where a complaint had led to any disciplinary action.

2. The Force Questionnaire

The questionnaire was sent to forces in the Autumn of 1998 and completed by the beginning of 1999. The questionnaire helped us to establish the precise date when each individual force first started using CS spray. Those forces not using the spray were asked to describe their concerns to us on the form.

The questionnaire provided us with information about who was being trained to use the CS spray within each force, details of what their training involved and how often refresher training was carried out.

We asked about methods of monitoring the use of CS spray within the forces because up until recently there had been no standardised way of recording that use. During the life of the PCA's research project, the ACPO Self Defence, Arrest and Restraint Committee have been encouraging forces to use a standard use of force form, a copy of which is attached at appendix 5. In our questionnaire we asked which forces had introduced this new use of force form.

The questionnaire also explored individual forces' use both of national guidance on the use of CS spray provided by ACPO and also of their own force guidelines. Seventy-five per cent of forces have their own additional guidelines and provided them to us. We were interested to see if they differed from the national guidelines, and if so whether they took things forward in any way. Finally, in an effort to learn whether forces' use of CS spray was being guided or affected by experience, we asked them whether they had changed their force guidance or training in any way since the introduction of CS spray and whether there were any circumstances in which they advised officers not to use the spray.

CHAPTER 2 – RESULTS - COMPLAINTS

It is important to stress at the outset of this chapter that the results which are presented here are based on a small sample, 135 fully investigated complaints over the period of one year. In itself this is slightly less than half the complaints actually recorded about the use of CS spray over the same period. Many of the complaints had been dispensed with where the complainant had not provided a statement with details of the complaint. In these cases there was insufficient data for us to analyse.

It is not possible to say exactly what proportion this sample represents in relation to the overall use of CS spray. This is because until recently, there has been no systematic recording within all police forces of the number of times CS spray is being used. However an estimate based on the available statistics provided to us by ACPO suggests that the total number of complaints about CS is in the region of 5% of the number of times the spray is used. (This figure is based on statistics from 9 forces, taking their actual use in relation to their individual complaint record). It is worth adding that in terms of “use”, this estimate does not include those occasions when the canister of spray has been drawn, but is a sufficient deterrent in itself for the contents not to be sprayed.

Importantly, it would be wrong to suggest that the sample we are looking at represents all the bad experiences which the public have had with CS spray. We do hope however that the sample represents trends and indicators of issues which are important to the public. (A table showing the complete results of our complaint questionnaire is at appendix 3). It is with these provisos that we analysed the information available to us.

1. Serious/Adverse Reaction to CS spray

In the complaints survey we distinguished between the anticipated short-term effects of the spray and any harm or injury which lasted longer than 2/3 hours and/or required hospital treatment. We categorised the latter as “serious injury”. Eight of the 135 complaint cases fell under this heading, that is 6% of all cases. None of the injuries were permanent. Typically the harm caused involved burns to the face and occasionally to the eyes. Most of the burns had subsided within a few days, the longest duration of hospital treatment being a period of three weeks. Interestingly, all but one of the eight complaint cases categorised as a serious injury

ADVERSE OR SERIOUS REACTION TO CS SPRAY

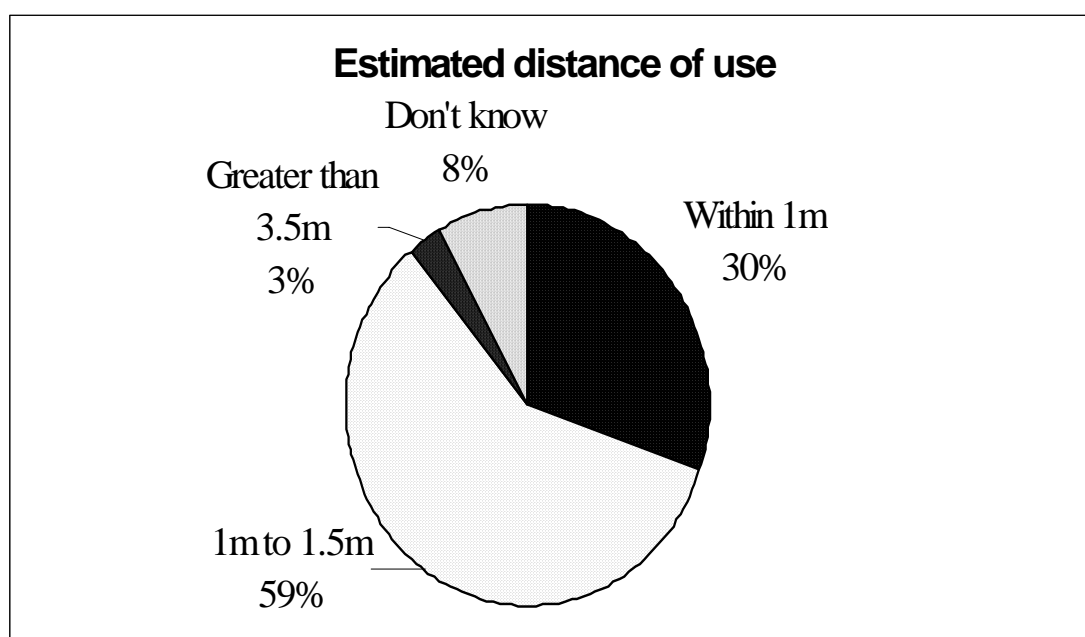
	CASES							
	1	2	3	4	5	6	7	8
Male	X	X	X	X	X	X	X	X
Used on Complainant	X	X	X	X	X	X	X	X
Adverse/serious Reaction	X	X	X	X	X	X	X	X
Permanent Injury								
Required effect	X	X	X	X	X	X	X	X
No effect								
1 application	X			X	X	X		
2 application		X	X				X	
4 application								
Over 4 applications								X
Restrained					X	X		
Handcuffs								X
Primarily Self defence		X	X	X		X	X	
Not Primarily self defence	X				X			X
Within 1m	X	X		X				X
1m to 3.5m			X		X	X		
More than 3.5m							X	
Alcohol		X				X		X
Mental Illness								
Enclosed Space	X			X				X
Open air		X	X		X	X	X	X
Public order			X			X	X	X
Domestic								
Police cell								
Private vehicle				X				
Licensed Premises								
Football etc								
Police Station								
Police Vehicle								
Hospital etc								
Contamination of Bystanders	X							
Contamination of Officers								X
Discipline				X				X

were attributable not to the CS component within the spray, but the solvent which is known as MIBK. (Appendix 1 provides an outline of the chemical make-up of CS spray). The eighth case featured an asthmatic reaction to the spray which appeared to be linked to the CS component rather than the solvent.

The table on page 4 shows a breakdown of other factors in eight cases causing serious injury. Significantly, half the cases involved the use of CS spray at a range of less than one metre, despite the fact that national guidelines stress that the risk of injury increases when the spray is used at close range. Half of the cases also involved more than the one short burst of spray which guidance suggests should be sufficient in most cases. In one of the eight cases over four bursts of spray were used. In three of the cases the complainant was already restrained when the CS was used and in one case the complainant was in handcuffs. Four of the eight cases involved public order situations and in one case CS was sprayed into a car.

2. Use of CS spray at close range

Since the range at which the CS spray was used appeared to be a significant factor in the cause of serious injury, we looked at the complaint sample as a whole to see whether the distance at which the spray was used was an issue. We found that in 30% of the complaints it appeared that the spray had been used at a distance of less than one metre. This figure needs to be treated with some caution, since distance is very difficult to gauge, especially retrospectively. Our analysis of cases has had to be based on an interpretation of witness evidence applied to known facts.



A case history will serve to illustrate the problem:-

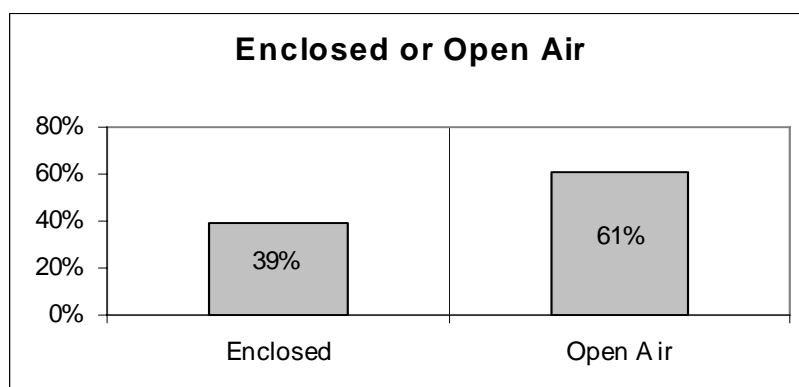
Case history A Mr A claims to have been sprayed directly into his face at close range. He suffered burns to the face and eyes, spent four days in hospital and was discharged as a patient after three weeks. While Mr A, his wife and a member of the public felt the spray was used very close, the officer concerned estimated that he used the spray at a distance of between 3-6 feet (1-2 metres). His colleague estimated between 2-3 feet (60-90 cm), still outside the recommended distance. In this case we concluded that the spray was used outside the recommended safe limit.

Based on analyses similar to the above, in 30% of our sample the predominant impression was that the CS spray was being used too close.

3. Where the CS spray was used

From the outset of our project we were interested in the circumstances in which the CS spray had been used, both in terms of location and in terms of motivation, in essence the where and the why of CS spray use. There had already been a number of media stories involving the use of the spray in private cars, in police vans and in cells. We also questioned whether the use of the spray in enclosed spaces as opposed to in the open air could be a factor in causing injury.

Our complaint questionnaire shows that nearly 40% of the complaints about the use of CS related to its use in an enclosed space. Within this figure 6% of complaints related to use of the spray in a private car or vehicle and a further 5% to police vehicles.



We were also interested to see how many complaints related to public order or domestic situations where the spray was used inside a home. Our concern about public order situations is that these are likely to involve a number of people and are not always ideal for the use of CS spray. Nearly half of our complaints arose out of public order incidents. It is important to put this into context. It would be wrong to suggest that any use of the spray in a public order situation was wrong. On the contrary it is one of the key situations in which CS spray is a potential asset. There is however a question of degree and judgement as to when the number of members of the public and/or police involved in an incident make the use of the spray more of a danger than an asset.

Twenty-three per cent of complaints related to the use of spray in domestic premises. We had felt that the use of the spray in a domestic situation with family and perhaps children involved and affected might be a factor in complaints. Again, it does not necessarily follow that the use of the spray in a domestic context is wrong. It is more that the intrusion into someone's home is likely to cause upset and distress and therefore trigger a complaint.

CIRCUMSTANCES OF CS USE

Public Order	66	49%
Domestic	31	23%
Police Cell	1	1%
Private Vehicle	8	6%
Licensed premises	4	3%
Football	1	1%
Police Station	3	2%
Police Vehicle	7	5%
Hospital	1	1%
Other	2	1%
Don't know	11	8%

4. Why the CS spray was used

At the heart of our research was a desire to establish whether the CS spray was really being used appropriately by the police. We had received isolated complaints which suggested that some officers, occasionally in the same force, were too keen to use the CS spray. There was a possibility that the spray was being used as a quick solution in situations where it was not justified.

The 1996 ACPO Guidelines, which were the basis for all training and guidance given to individual forces, make two key points. The first was that the object of CS spray was to provide officers with a tactical advantage in a violent encounter. It was designed for dealing with violent subjects who could not be otherwise restrained.

The second key point, which applies to any use of force by the police, was that it must be reasonable in the circumstances. Every situation must be judged according to its own particular circumstances. In practice, this meant that the use of CS spray had to be finally a matter of judgement on the part of the officer who is using it and who will be accountable for the decision that is made.

Since the use of CS spray, or indeed any use of force, is clearly one where one cannot afford to be too prescriptive, the question for us was whether police officers were using their judgement correctly? Were officers too keen to see or anticipate a threat of violence? Were they using the spray unreasonably in situations where a person was already detained and restrained by police or indeed had been handcuffed.

The results of the complaint questionnaire in this particular area were as follows: in 14% of cases the subject of the spray had been physically restrained by the police and in 4% of cases he or she was already in handcuffs.

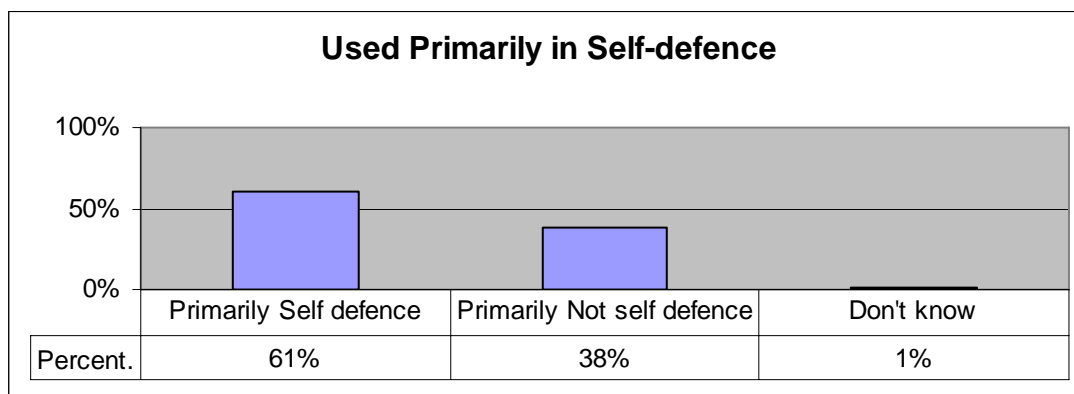
In addition we found that in 10% of cases there was a concern about the number of police officers involved in an incident in relation to the possible threat posed by a complainant, that is the number of police officers was sufficient to deal with the complainant in other ways. These were cases where we felt the incident could have been resolved safely without the spray. There are some cases where the spray will be appropriate despite a large number of officers being present.

It would be wrong to suggest that in every case where a member of the public was detained and/or physically restrained by the police, that CS spray should not be used. But these figures do raise some interesting questions about the judgements that officers are making when dealing with the public. They also give information about factors which may trigger a complaint.

It is a fact that the introduction of CS spray was to provide additional protective equipment for the police. Indeed the 1996 ACPO Guidance stresses that the use of the spray is “primarily for self defence”. If CS spray was “sold” both to the public and to the police primarily as a method

of self defence, albeit as a last resort, it is hardly surprising that such a number of our complaints feature situations where it is not obvious, certainly to members of the public, that the spray is being used in self defence.

Since it appeared that we were beginning to identify a difference between what the public expected the CS spray to be used for and what in fact they believed it was being used for, we conducted a further analysis of our sample data. We reviewed each case and asked ourselves the question whether the use of the spray was primarily in self defence. This was necessarily a fine judgement to make. Although in some cases, the subject of the spray was certainly not posing a threat and in one or two cases was actually running away, in the majority of cases there was certainly an element of violence or anticipated violence with which the police were contending. Having said this, we still feel that the fact that in nearly 40% of cases in our view CS spray was not being used primarily in self defence, has to be significant.



A case history will help to illustrate some of the complexities.

Case history B Mr B had been seen by the police, having had a heated discussion with a woman. Concerned for the woman’s safety, police had asked Mr B to stop and talk with them. Mr B told them to mind their own business and walked away. Officer 1 a tall, strong man, pursued Mr B, tried to talk to him and a struggle ensued in which both fell to the ground. Officer 2 who happened to be of a smaller, weaker build than his colleague was fearful for Officer 1’s safety and somewhat to his colleague’s surprise, used the spray. Both Mr B and Officer 1 suffered as a result of the use of the spray, but the incident was otherwise resolved. Although in this case there was a perceived threat of violence at secondhand by the second officer, we concluded that the use was not primarily for self defence.

As a result of these initial findings, the new ACPO notes for guidance on police use of CS spray, which replaced the 1996 guidance, have been changed. The 1999 guidance omits any mention of the use of CS spray being for self defence or primarily for self defence. It focuses on the use of the spray in the context of violence or the threat of violence. We welcome this change. It will help to begin to dispel one of the misunderstandings about the use of CS.

5. Cross Contamination

One of the disadvantages of CS spray is that if it is used inaccurately or inappropriately, both the public and the police may be affected by it. It was interesting that 10% of our complainants had not actually had the spray directed at them. In nearly a quarter of our complaint incidents, members of the public for whom the spray was not intended suffered the effects of the spray. In 8% of cases those affected were completely innocent bystanders not involved in the incident at all.

The number of officers who suffered cross contamination from the CS spray was noticeably higher, 53% of our fully investigated complaint sample. While unnecessary discomfort and distress to members of the public is obviously something to be avoided, the cross contamination of officers carries additional risks. Officers will be less able to do their jobs whilst incapacitated by the spray. We were interested to note and welcome the new section in the 1999 ACPO Guidelines for use of CS spray, which deals specifically with public order events. The guidance recognises the effect that CS spray can have on crowd dynamics, and the likelihood of widespread cross contamination which can cause “panic or even hysteria”. The guidance advises caution in preparing for planned public order events.

Another concern which goes with cross contamination caused by the spray, is whether members of the public are getting appropriate advice and after care in dealing with the effects of the spray. Our survey was unable to show us what percentage of innocent bystanders were left without appropriate advice, but we do know that at least 20% of our complainants either did not get appropriate advice or certainly felt that what they were told or given in terms of leaflets, was not adequate. The need to counsel and inform all those involved in a CS spray incident cannot be stressed too strongly.

6. Effective use of CS spray - alcohol and mental health issues

One of the concerns when CS spray was introduced was the fact that it was known not to work on all subjects. An anticipated 10% failure rate where the subject failed to respond, was apparent from the early trials. In our complaint sample the failure rate was almost double this at 18%. Figures obtained by ACPO endorse this, suggesting a failure rate of 20% across the UK – one in every five uses.

Alcohol

Research had shown that certain personalities and particularly persons at a peak of physical activity and adrenalin stimulation, and/or those under the influence of drugs or alcohol, were less likely to respond to the spray. In almost four out of ten of our complaint incidents, alcohol was a contributory factor. This is not untypical in complaints of assault where force has been used. However significantly, of the 52 complaints where alcohol was a feature, 9 were also incidents when the CS spray proved to be ineffective.

Mental health issues

There are a number of concerns to do with the use of CS spray on those suffering from mental illness which have been brought into focus during the life time of this research project. These concerns relate principally to the prospect of the spray exacerbating the effects of anti-psychotic medication or alternatively failing to produce the desired effect on the subject. There is also an issue around the perception that using CS spray on the mentally ill is effectively criminalising their condition.

In our complaint sample, six people were suffering from some form of mental illness. Of these six people, the CS did not have an effect on three of them.

The issues around CS spray and mental illness are complex and emotive. The following tragic case received considerable publicity at the time.

Case history C Mr C was being treated for mental illness. He had discharged himself from hospital and the police came to his home in connection with an offence. When Mr C refused to come down from the loft where he was hiding, the police sprayed the contents of 4 canisters of spray into the loft. The officers later justified this, saying that Mr C was known to be violent, and that this was an attempt to contain that violence. In fact Mr C was shortly afterwards found hanged in the loft. The Inquest found that the use of the spray did not contribute to Mr C's death. However the officers concerned received 'advice' (a warning) and retraining about their use of the spray.

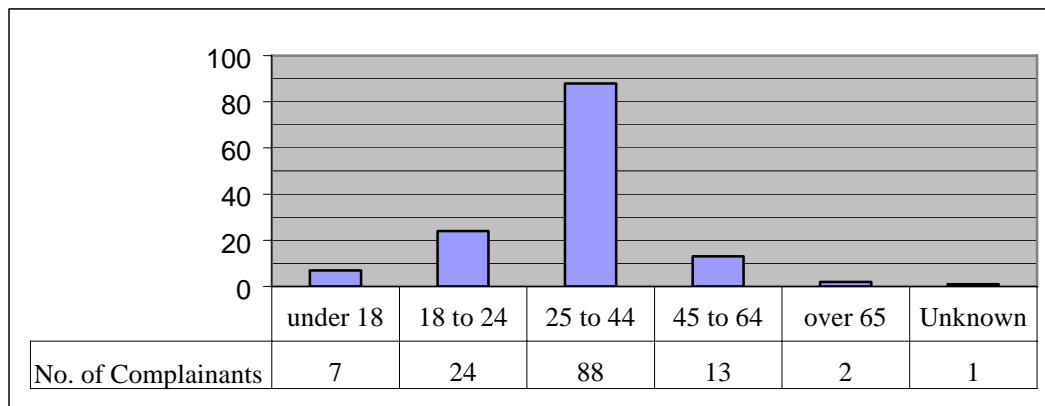
There is often concern in complaints involving mental health, voiced by relatives, social workers and other professionals, around the use of force on the mentally ill. This case was no exception. The issue however is quite a complex one. It would be wrong to suggest at this stage that CS spray should never be used on the mentally ill. Sometimes it can be a safer option. One of our complaint sample where the spray was effective illustrates this.

Case history D Mr D was in the exercise yard of a custody suite. He was known to have mental problems. He was refusing to re-enter the custody area to see a psychiatrist and was threatening to kill himself or anyone who came near him. The officer who was with him consulted the custody sergeant. Six officers took part in a planned manoeuvre, one officer using the spray, the others moving forward to take hold of Mr D. He was then taken safely inside to talk to his psychiatrist.

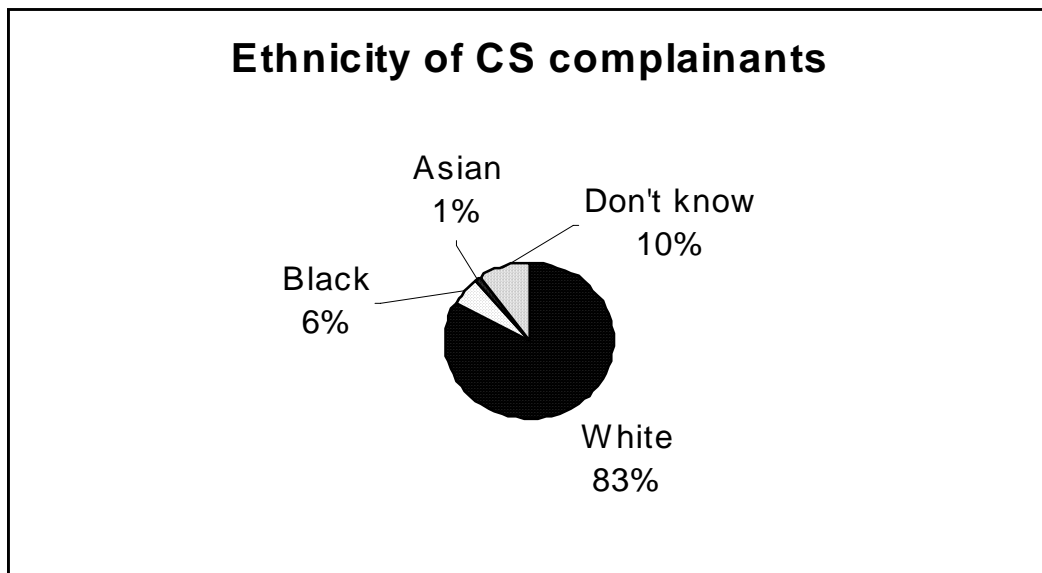
More research is urgently needed on the effect of CS spray on those with a mental disorder and in relation to drugs which are commonly used. In the meantime we welcome the new section of the 1999 ACPO Guidance, advising consultation with relatives and professionals when dealing with the violently mentally ill. There is also the need for officers to be made aware of the fact that CS may not work in such situations and that additional use will not assist them.

7. Complainant profile

Of our 135 complaint sample, 73% involved men and 23% women*. This closely follows the pattern relating to all fully investigated complaints dealt with by the Authority in the period 1 April 1998 to 31 March 1999 when 80% of all complainants were male. The age range of complainants also mirrors that of complainants as a whole with the majority being aged between 25-44.



We looked at the ethnicity of the complainants in the sample: 83% were white, 6% were black, 1% were Asian and in 10% of cases the ethnicity was not known.



The remaining 4% of complaints were made by members of the public who were not the intended subject of the spray.

DISCIPLINARY ACTION FOLLOWING USE OF CS

	CASES												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Male	X	X	X	X	X	X	X	X	X	X	X	X	X
Used on Complainant	X	X	X	X	X	X	X	X	X	X	X	X	X
Adverse/serious Reaction				X									X
Required effect		X	X	X	X	X	X	X		X	X	X	X
1 application		X		X		X	X	X	X	X	X	X	
3 application			X		X								
over 4	X												X
Restrained						X	X					X	
Handcuffs													X
Primarily Self defence		X		X	X			X	X	X	X		
Not Primarily self defence	X		X			X	X					X	X
Used within 1m	X			X								X	X
Concern of Numbers	X		X		X	X	X	X					
Alcohol		X	X		X			X	X				X
Mental illness	X												
Enclosed	X			X	X		X	X	X	X	X		
Public order		X	X									X	X
Domestic	X				X						X		
Police cell													
Private vehicle				X				X		X			
Licensed Premises													
Football etc						X							
Police Station									X				
Police Vehicle					X		X						
Hospital etc													
Contamination of Others						X					X		
Contamination of Bystanders													
Contamination of Officers	X					X	X	X	X			X	X
	Advice	Advice	Advice	Advice	Advice	Charged	Advice	Advice	Advice	Advice	Advice	Charged	Advice

8. Disciplinary action

From our sample of 135 cases, some form of disciplinary action was taken in 10% of cases. This is significantly less than the overall average of disciplinary action taken in relation to fully investigated complaints which over the last 3 years averaged around 25%. With the CS spray complaints there were a total of thirteen cases in which some action was taken, in two cases this took the form of disciplinary charges and in the remaining eleven cases some form of constructive advice or discussion took place about the use of the spray.

The table opposite gives an interesting breakdown of the circumstances which prompted the appropriate disciplinary action. In four of the cases the spray was used at a distance of less than one metre and in two cases serious injury resulted. In six of the cases there was concern about the number of officers involved in the restraint of the complainant, and whether the incident might not have been resolved without the use of the spray. In four cases the complainant was already restrained and in one case he was already handcuffed. Also in six cases we judged the use of the spray not to have been primarily for self defence.

As to where the complaints leading to discipline actually took place, our survey shows that eight out of thirteen cases featured the use of the spray in an enclosed space. In five cases the CS was sprayed directly into a vehicle. Our discipline cases also featured a very high level of cross contamination. In seven out of the thirteen cases the officers concerned were affected by the spray that was used.

In summary it can be seen that our discipline cases, although small in number, feature the main issues which give concern regarding the use of CS spray:

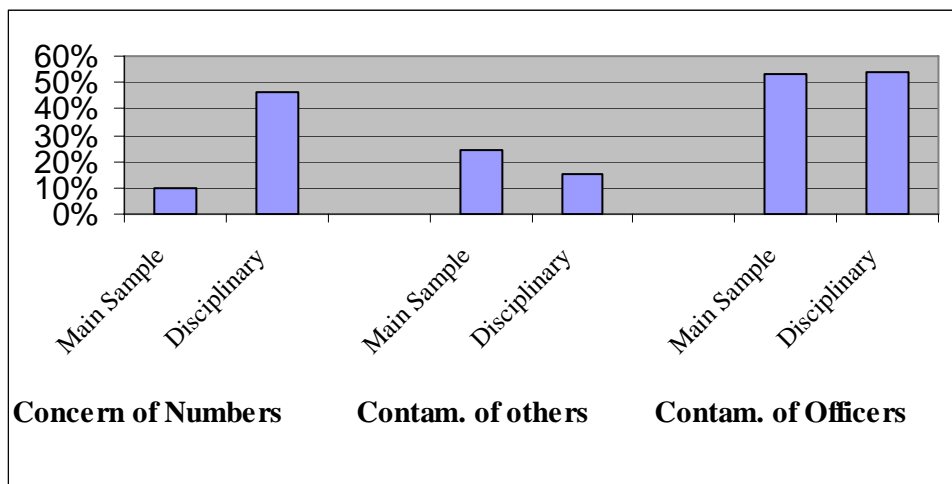
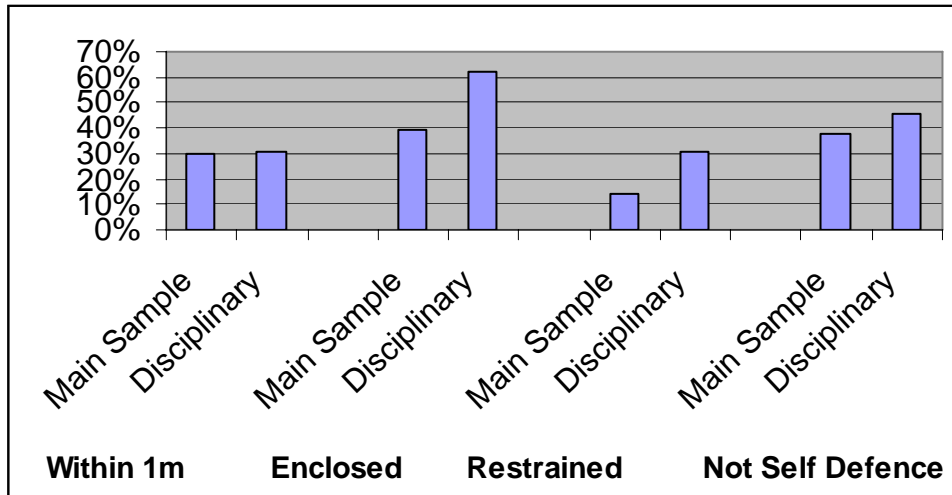
- use of the spray at too close a range often leading to injury;
- use in an enclosed space particularly in cars;
- use when the subject is already restrained and not primarily for self defence;
- use when the officers significantly outnumber the complainant or complainants;
- cross contamination of the public and particularly of police officers present.

The following case histories leading to disciplinary action provide a good illustration of some of these key points.

Case history E Officer 1 wanted to speak to Mr E about cycling without his lights on . While he was doing this, officer 2 says that he thought Mr E was going to run over his colleague. He arrested Mr E, who became annoyed, and then sprayed him. The PCA felt that there was no threat of violence and that the use of the spray was unnecessary and therefore recommended that officer 2 be charged with using excessive force.

Case history F Mr F was stopped by police in his car. There was a dispute about whether or not he was wearing a seat-belt. The officer claimed Mr F got out of the car in an aggressive manner. Mr F claimed he was sprayed while in the car. Either way he suffered burns to the cornea of his eye and spent a week being treated in hospital. He made a full recovery within a month. There was no way of telling whose account – Mr F or the officer's – account was true, although the severity of the injury suggested the close use of the spray. The PCA recommended advice for the officer about the use of the spray at close range and particularly into a small enclosed space such as a car.

COMPARISON BETWEEN KEY FINDINGS IN MAIN AND DISCIPLINARY SAMPLE



CHAPTER 3 - RESULTS – FORCE QUESTIONNAIRE

In addition to establishing which forces were using CS spray and since when, our force questionnaire set out to address three key areas. These were to do with the training and guidance given to officers in the use of CS spray and the methods of recording the use. What follows is based on the answers given to the questionnaire by the 40 forces who use the spray.

The views of the three forces (Northamptonshire, Nottinghamshire and Sussex) which do not use CS spray are considered in the following chapter which deals with the overall safety and effectiveness of CS spray.

1. Training

The 40 forces which use the spray train all their operational staff including special constables. We found minor variations in policy where some forces train or give the option of training to more senior officers in a managerial role.

The amount of time spent by forces specifically on the use of CS spray during initial basic training was, on average, 4-5 hours. About 15% of forces spent up to a day on CS, but no force spent less than 4 hours. The amount of time spent on the spray during refresher training was proportionately less, on average about 2 hours.

It is important to explain that the amount of time particularly during refresher training specifically devoted to CS spray, is not necessarily an indicator of the actual time spent in considering when to use the CS spray appropriately. In many cases this is included in role play exercises where officers have to respond to a given situation acted by trainers and to decide whether to use CS spray, batons or indeed whether there is a need to use any force at all. Some forces explained that they could not actually quantify the amount of time dedicated to training on the use of CS spray because of this.

In terms of the frequency of refresher training, the vast majority of forces provided this annually. Five forces provided refresher training more often than this, and three forces provided the refresher training only every two years.

In the past the PCA has found an inverse correlation between the frequency and extent of training and the number of complaints received. Put simply, we have found that the more

training there is the less complaints there are. It is fair to say that we have not found such a clear correlation emerging in relation to complaints about the use of CS spray. Although the two forces who have most frequent refresher training certainly have fewer CS related complaints per 1,000 officers, the pattern is less clear in relation to other forces. There is quite a variation in the complaint performance of the three forces which provide refresher training every six months. Moreover the three forces who only provide the refresher training every two years do not appear to attract a significantly greater proportion of complaints.

We conclude that it is probably the nature of the training as much as the time and the frequency of the training, that matters. With all use of force, but particularly perhaps with CS spray, it is important to focus on the appropriate response to a given situation. In our view training specifically dedicated to the use of CS is only the starting block to appropriate use. The crucial part of training is that which relates to when to use the spray and when **not** to use it. As previously explained, this often forms part of training in the form of role play. The role play element is normally part of self defence training. We would urge all forces to make sure that CS is integrated into this element. We believe that without this there is a danger that officers could develop a mind set of simply reaching for the spray as a quick way to deal with a situation without fully considering other options.

2. Guidance

Responses to the questionnaire showed that all forces use the guidance provided by the ACPO Self Defence, Arrest and Restraint Committee. At the time the survey was conducted, all forces were using the guidelines produced in 1996. Since then, in November 1999, new guidance was produced. In addition to the ACPO guidance, we found that 75% of forces had produced additional guidance of their own. An analysis of individual force guidance showed no significant departures from the advice being provided by the national body. In practice we found that forces were simply expanding on the principles contained in the ACPO guidance.

Where forces did have their own guidelines, we found that they were reviewed regularly. Where changes had been made, we found that with a significant number of forces, a decision had been taken that it was not compulsory for a person sprayed with the CS to be seen by a force medical examiner. We were not particularly concerned about this since the key point about appropriate after care with CS is that proper advice should be given quickly and clearly. Waiting for an FME to arrive and provide this is not necessarily the most effective way of dealing with the situation.

While many forces properly pointed out that the use of the spray was ultimately a matter of judgement on the part of the individual officer, a few forces did pick out areas where they felt the use of the spray was inadvisable. Areas of concern identified by these forces included incidents involving firearms, crowd situations, football matches and use on aircraft.

It was interesting to note that many of the areas flagged up by our questionnaire were subsequently incorporated in the new 1999 ACPO guidance. The new guidance highlights the impact that use of CS spray could have on crowd dynamics together with the risk both of cross contamination and of disruption and possibly hysteria. The new guidance also advises caution in response to situations where firearms are involved.

3. Recording the use of the spray

One of the problems that we have had in putting our research project into context, is that until recently there has been no uniform method of recording, assessing and generally monitoring the use of CS spray by individual forces. In 1998 the ACPO Self Defence, Arrest and Restraint Committee produced a standard use of force form which they invited Chief Constables to introduce into their forces. A copy of this form is at Appendix 5. The object of the scheme was to influence officer safety strategies within individual forces and in so doing enable some national comparisons to be made and an informed overview to be taken. The idea has been for individual forces, having introduced the forms, to provide quarterly returns to the ACPO Committee.

Although all forces told us, in 1998, that they were either using the form already or planned to do so shortly, the scheme has been slower in getting off the ground than anticipated. There have been problems in forces trying to adapt their own forms and producing their quarterly figures in the correct way. However we understand that over 50% of forces are now co-operating with the scheme.

The PCA has welcomed and supported this initiative on the part of ACPO which aims to inform their policy and decision making in relation to self defence equipment. Unfortunately it is only from now on that we may begin to build up an informed national picture, not only about the detail of the use of CS spray, but putting this in the context of all other possible uses of force.

We do urge forces not only to introduce the forms, but also to ensure that they are used properly and constructively. We also think that even more use could be made of the forms. Although they currently provide extensive detail with regard to injuries suffered by officers, there is no mention of injuries suffered by members of the public. We understand that some forces do collect such information as well as details such as ethnic origin on their own use of force forms. We think this would be a good addition to all forms.

CHAPTER 4 – CS SPRAY – SAFE AND EFFECTIVE?

1. Safety

It is important to stress that the CS used by the police comes in the form of a **spray**, which is dispensed, from a hand held aerosol canister. It is frequently and incorrectly, referred to as a **gas**. It is dispensed in a liquid stream which contains a 5% solution of CS in the solvent methyl isobutyl ketone (MIBK), comprising 1.5 grams of CS dissolved in a total volume of 30 millilitres. The propellant is nitrogen. The full chemical make up of the spray is detailed at Appendix 1. Put briefly, the effect of the CS is to distract and incapacitate the person targeted by causing severe temporary irritation of the skin and mucus membranes in the eyes, nose and mouth. While the purpose of the MIBK solvent is to provide a method of conveying the CS on to the subject, it is an irritant in its own right and has a significant drying effect on the skin which can cause peeling, redness, itching and burns. Indeed, in the vast majority of cases, it is the solvent not the CS which is causing an adverse reaction.

When CS spray was introduced in 1996 it was claimed that it presented no serious risk to health. This claim was based on extensive research carried out for the Home Office before its introduction. Since then and following continuing concerns about safety, further research has been undertaken for the Department of Health. In 1999 the department's advisers concluded that “available data did not in general raise concerns regarding the health risks of CS spray itself”¹. The Committee had been looking in particular at concerns relating to mutagenicity, carcinogenicity or terogenicity. Although the Committee considered CS in the context of MIBK, it is agreed that further work needed to be done both in looking at alternatives to the solvent and in looking at CS in the context of the solvent.

It was also agreed that further work needs to be done in relation to the long-term effects of the spray as a whole. The ACPO Self Defence, Arrest and Restraint Committee has had work under way for some years now in terms of alternatives to the solvent MIBK.

In addition work is being done on alternatives to CS spray as a whole. Work in this area is eagerly awaited by the three forces which have so far decided not to use CS spray. We talked to Nottinghamshire, Northamptonshire and Sussex Police about their reluctance to introduce the spray. They all said much the same thing, believing that not enough was known about the

¹ Committees on Toxicity, Mutagenicity and Carcinogenicity of chemicals in food, consumer products and the environment.

effects of CS spray and particularly the long term effects to make it a comfortable option for them. All three forces mentioned the duty of care, not only to their officers, but also to the public. An additional point made, was the fact that spray is known not to be effective on some people. This concern is strengthened by the findings of our study showing a lack of effectiveness in 18% of cases.

We should stress that the PCA respects the position taken by the Chief Constables of Nottinghamshire, Northamptonshire and Sussex and understands the reasons for their caution. Their reluctance to introduce CS spray so far has also acted as a catalyst for research into alternative incapacitants. For instance, there is interesting work being done on both natural and chemical incapacitants based on pepper. These might have the advantage of avoiding the use of the solvent MIBK. They have not yet however been subject to the Department of Health tests for carcinogenicity.

While research continues to be done both on alternatives to the solvent and to the spray itself, there is an urgent need for more research to be done on the existing spray in relation to those who may be vulnerable through drink or drugs, but specifically those who may be mentally ill. Concerns in this area were initially highlighted in the investigation into the death of Ibrahima Sey in 1996. The use of CS spray on Mr Sey while he was handcuffed and on his knees, caused outrage at the time of his death. There was a perfectly legitimate concern that the CS spray had caused or at least contributed to Mr Sey's death. In fact the jury did not link CS spray to Mr Sey's death. They found that he died of restraint asphyxia and excited delirium. Nonetheless, the Coroner, whilst stressing the urgent need for more research in 1997, particularly questioned the wisdom of using CS spray in cases of excited delirium.

Since 1997, as the use of CS spray has become more established, mental health organisations have become increasingly vocal about their concerns. As already noted, it is feared that the spray may react with medication being taken.

In 1998 the Royal College of Psychiatrists set up an informal working group combining representatives from major mental health organisations and the ACPO Self Defence, Arrest and Restraint Committee. The object of the group was to focus specifically on the use and the associated problems and risks of CS spray and the mentally ill. It is in part in response to issues raised by the group, that welcome changes have been made to the new 1999 ACPO guidance on the use of CS spray. The guidance does not prohibit the use of CS spray on the mentally ill, but it does stress that, the desirability of considering where possible, other force options, and

stresses the importance of discussion and consultation with relatives and mental health professionals involved.

2. Effectiveness

In considering whether CS spray can be judged to have proved itself effective three areas need to be taken into account: whether the spray produces the required effect on the subject; whether it reduces assaults on the police; and whether it reduces injuries to the public.

Our limited sample would seem to suggest that the failure rate of the spray to achieve the required effect is higher than the figure of 10% which is generally given. In our complaint sample it was 18%. Of the 24 complaints where the CS spray was ineffective, it was significant that nine cases involved alcohol and a further three involved people who were thought to be mentally ill.

One indication of effectiveness is whether assaults on the police have gone down since the introduction of CS spray in 1996. Figures provided by HMIC (Her Majesty's Inspectors of Constabulary) show a significant fall in assaults on police over the last three years. The total number of assaults has fallen from nearly 15,500 in 1996/97 to 12,569 in 1998/99. See the table following.

ASSAULTS ON POLICE			
	1996/97	1997/98	1998/99
Total	15,488	13,581	12,569

In contrast the figures for assaults on the three police forces who are still not using CS spray can be seen overall to have increased slightly over the period 1996/99. See table below.

TOTAL ASSAULTS - NON CS FORCES			
	1996/97	1997/98	1998/99
Northamptonshire	157	183	204
Nottinghamshire	384	356	373
Sussex	393	375	411

Assault figures, as any statistics, need to be treated with some caution since forces may differ in their definition of what constitutes an assault. A further possible indicator of whether assaults on Police are going up or down is to look at statistics on the amount of working days lost to the Police as a result of assaults. The following table shows the relevant figures for the total of forces in England and Wales and for the three forces not using CS spray.

POLICE WORKING DAYS LOST DUE TO ASSAULTS			
	1996/97	1997/98	1998/99
All Forces	41,166.45	33,729.40	33,866.24
Northamptonshire	486	287	211
Nottinghamshire	876	507	748
Sussex	1,050	1,024	514

The third measure of whether CS spray has proved to be effective is whether injuries to the public have reduced since the introduction of the spray. After all, the spray was meant to be a safer alternative for the public, just as much as it was for the police. Unfortunately, it is very difficult to assess effectiveness in this area. The lack of any formal and consistent recording of the use by individual forces of the spray has been referred to in this report a number of times. (While we have welcomed the introduction of a national use of force form as introduced by ACPO, we note with some concern that there is no mention on the form of injuries to the public. We think this would be a sensible addition).

Faced with the lack of any national figures we have tried to ascertain what, if anything, can be deduced from our own complaint statistics. Since CS spray was introduced as a safer alternative principally to the batons also used by forces, it seemed logical to see whether our complaints about use of batons had gone down as CS spray was introduced. Because of the staggered introduction of CS spray into individual forces and the fact that three forces are still not using the spray at all, it has not been possible to produce any meaningful figures in relation to baton complaints in England and Wales as a whole.

However, the force performance table on pages 32 and 33 traces the number of actual baton complaints per 1,000 officers made against individual forces over the last three years. From this

it can be seen that there has indeed been an overall decrease of over a third, from 461 baton complaints in 1996/7 to 285 in 1998/9. While there is considerable variation between forces and between years, it is fair to say that those forces who introduced CS spray longest ago, in 1996, appear to show the most significant decrease in baton complaints.

The three forces not using the spray, on the other hand, on average show an increase in baton complaints over the three year period: Northamptonshire from 3 to 13 and Sussex from 20 to 30. The picture for Nottinghamshire is less clear with 5 baton complaints in 1996/7, 12 in 1997/8 and 5 in 1998/9.

3. Conclusions

On balance, we conclude that CS incapacitant spray does not appear to present a serious risk to the public. Our limited sample of complaints has shown not only that no permanent injury was caused by the use of the spray, but also importantly, that no one's death is known to have been caused by the spray.

This does not mean, however, that the burns and blistering which can be caused by the solvent MIBK are not a matter of concern. Similarly, the use of the spray in the context of alcohol, drugs and mental illness remains uncharted territory, where the risk is not fully known.

We can only welcome and encourage all initiatives aimed at producing better research into the effects of the spray in its current form, together with alternatives both to the solvent MIBK and to CS spray as a whole.

In terms of effectiveness it would seem that the introduction of CS spray has made a real impact in making life safer for police officers. We hope that it is making life safer for the public as well. Although the evidence is less tangible here, the indications are that this is the case.

In conclusion, although the study found no evidence to suggest that CS spray in its current form should be withdrawn, significant concerns remain amongst important groups. Further research is required and continued caution in the use of the spray reflected in guidance and training given to officers.

We urge forces to act on the new guidance introduced in 1999 by the ACPO Self Defence, Arrest and Restraint Committee, particularly where this deals with mental illness, use in crowds, on car drivers and in incidents involving firearms. We also hope that forces will review the training and guidance given to officers on the use of CS spray in the light of the recommendations which follow. Amongst these we single out the importance of officers understanding the very real risk of causing burns and serious injury by using the spray at too close a range and particularly by spraying into an enclosed area such as a car.

RECOMMENDATIONS

1. That forces review training and guidance given to officers with a view to emphasising the risk of using CS spray at too close a range and particularly into a small, enclosed space such as a car.
2. That training should emphasise the risks involved in using the spray on those who are vulnerable through mental illness, alcohol or drugs, and that the spray may not work in these circumstances and may also exacerbate a violent situation.
3. Where mental illness is involved, that training should reinforce the need for consultation with family and mental health professionals where possible, to find alternatives to the spray as suggested in ACPO's 1999 guidance.
4. That in line with the new guidance provided by ACPO, forces consider the risks of using the spray in large public order situations, the effect of the spray on crowd dynamics and the possibility of causing panic and hysteria because of cross contamination.
5. That with regard to cross contamination, in terms of after care, forces should remind officers through training and guidance, that it is important to ensure that all those who may have been affected by an incident involving the use of the spray receive the appropriate help and medical advice.
6. That the guidance given by ACPO in two further areas be adhered to. Caution is advised about using the spray in an incident involving firearms. Where a person is actually holding a firearm, the use of the spray might cause that person to fire indiscriminately. Caution is also advised in relation to using the spray on those in charge of a vehicle. Similarly, the spray could cause unpredictable behaviour.
7. That forces not already using role playing exercises where CS spray is one of a number of options should review their self defence and restraint training and consider introducing this approach. This would be in addition to the training on how to use the spray once the option has been chosen.
8. That forces review their practices with regard to the recording of the use of CS spray in line with the ACPO use of force form.

9. That forces and ACPO consider adding a section to the use of force form to record injuries suffered by members of the public.

10. That research in the following key areas should continue to be progressed rapidly:
 - alternatives to the solvent MIBK;
 - long term effect of CS spray;
 - effect of the CS spray on those with mental illness and drugs associated with this;
 - alternatives to CS spray.

FORCE PERFORMANCE

TABLES

CS SPRAY AND GENERAL COMPLAINTS 1998/99

CS Start date	Officers	General Complaint Cases	CS Complaint Cases	General Complaints per 1,000 officers	CS Complaints per 1,000 officers
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Bedfordshire	March 97	1051	57	3	54.23	2.85
City of London	June 1998	793	32	0	40.35	0
Dyfed – Powys	Jan 96	1013	37	1	36.52	0.99
Gwent	April 98	1254	71	0	57	0
Warwickshire	June 97	924	60	9	69.94	9.74
Wiltshire	May 98	1148	51	1	44.4	0.87

Cambridgeshire	Nov 96	1286	145	16	112.75	12.44
Cumbria	Nov 96	1153	72	7	62.45	6.07
Gloucestershire	April 97	1091	110	8	100.82	7.33
Lincolnshire	Nov 97	1159	65	3	56.08	2.59
Northamptonshire	N/A	1162	94	N/A	80.90	N/A
Suffolk	Nov 97	1180	123	14	104.24	11.86

Cleveland	March 96	1453	103	14	70.89	9.64
Dorset	Aug 96	1286	67	3	52.1	2.33
Durham	Jan 97	1559	38	7	24.37	4.5
Norfolk	Dec 97	1410	119	9	84.39	6.38
North Wales	Sept 97	1395	134	7	96.06	5.02
North Yorkshire	Oct 96	1360	83	8	61.03	5.88

Cheshire	Oct 97	2055	166	9	80.78	4.38
Derbyshire	June 97	1769	78	7	44.09	3.96
Hertfordshire	April 98	1706	48	2	28.14	1.17
Leicestershire	April 97	1975	115	11	58.22	5.57
Surrey	April 98	1615	123	2	76.16	1.24
West Mercia	June 96	2024	149	17	73.62	8.40

Devon & Cornwall	Aug 97	2918	253	15	86.7	5.14
Essex	Oct 97	2903	188	10	64.76	3.44
Humberside	Nov 97	2003	141	10	70.39	4.99
Nottinghamshire	N/A	2269	160	N/A	70.52	N/A
Staffordshire	May 97	2271	126	9	55.48	3.96
Sussex	N/A	2924	337	N/A	115.25	N/A

Avon & Somerset	Aug 96	2966	246	11	82.94	3.71
Hampshire	Dec 96	3490	249	13	71.35	3.72
Kent	Dec 96	3200	163	17	50.94	5.31
Lancashire	Jan 98	3245	275	7	84.75	2.16
South Wales	June 97	2946	273	21	92.67	7.13
Thames Valley	Aug 98	3790	256	1	67.5	0.26

Greater Manchester	April 97	6890	659	35	95.65	5.08
Merseyside	Nov 96	4270	483	62	113.11	14.52
Northumbria	Feb 97	3802	122	16	32.09	4.21
South Yorkshire	Feb 98	3171	150	3	47.3	0.95
West Midlands	June 97	7215	408	42	56.55	5.82
West Yorkshire	March 96	5066	249	19	49.15	3.75

Metropolitan	Nov 97	26106	1878	21	71.9	0.80
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Total		124,266	8756	470	68.57	4.38
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CS Introduced in 1996 CS Introduced in 1997

BATON COMPLAINTS PER FORCE 1996-1999

	1996/97		1997/98		1998/99	
	Actual No	Per 1000 officers	Actual No	Per 1000 officers	Actual No	Per 1000 Officers
Bedfordshire	1	0.89	2	1.85	1	0.95
City of London	1	1.15	1	1.20	0	0
Dyfed – Powys	0	0	0	0	0	0
Gwent	3	2.44	0	0	3	2.39
Warwickshire	3	3.16	8	8.75	3	3.25
Wiltshire	5	4.29	1	0.86	4	3.48
Cambridgeshire	13	10.38	3	2.32	4	3.11
Cumbria	2	1.78	2	1.72	1	0.86
Gloucestershire	8	7.02	7	6.32	3	2.74
Lincolnshire	2	1.73	2	1.68	2	1.72
Northamptonshire	3	2.53	13	11.00	13	11.19
Suffolk	9	7.76	9	7.51	5	4.24
Cleveland	2	1.39	4	2.70	5	3.44
Dorset	0	0	0	0	2	1.56
Durham	4	2.81	2	1.35	1	0.64
Norfolk	1	0.71	0	0	3	2.13
North Wales	3	2.17	5	3.65	4	2.87
North Yorkshire	3	2.25	2	1.45	1	0.74
Cheshire	6	2.98	7	3.45	7	3.41
Derbyshire	4	2.23	2	1.14	4	2.23
Hertfordshire	2	1.16	3	1.73	1	0.59
Leicestershire	0	0	6	3.06	5	2.53
Surrey	0	0	0	0	1	0.62
West Mercia	12	5.97	10	4.92	2	0.99
Devon & Cornwall	8	2.78	5	1.72	3	1.03
Essex	11	3.76	19	6.45	8	2.76
Humberside	11	5.39	12	5.91	5	2.50
Nottinghamshire	5	2.14	12	5.18	5	2.20
Staffordshire	22	9.91	8	3.59	6	2.64
Sussex	20	6.46	23	7.57	30	10.26
Avon & Somerset	13	4.32	16	5.38	5	1.69
Hampshire	19	5.65	11	3.16	7	2.01
Kent	4	1.24	9	2.73	5	1.56
Lancashire	15	4.68	17	5.18	4	1.23
South Wales	35	12.02	16	5.35	10	3.39
Thames Valley	18	4.89	9	2.43	10	2.64
Greater Manchester	12	1.72	22	3.18	15	2.17
Merseyside	5	1.17	17	4.03	10	2.34
Northumbria	1	0.27	3	0.81	1	0.26
South Yorkshire	2	0.64	3	0.95	3	0.95
West Midlands	32	4.44	27	3.81	4	0.55
West Yorkshire	24	4.66	18	3.43	14	2.76
Metropolitan	115	4.25	100	3.79	58	2.22
Total / Median	461	3.37	441	3.29	285	2.35

CS Introduced in 1998 CS not used

CS SPRAY – CHEMICAL MAKE-UP

The CS spray being used by Police forces in England and Wales is dispensed from a hand held aerosol canister. It is dispensed in a liquid stream which contains a 5% solution of CS in the solvent Methyl Isobutyl Ketone (MIBK), comprising of 1.5 grams of CS dissolved in a total volume of 30 millilitres. The propellant is nitrogen.

A 5% solution has been chosen because it is believed that it is the minimum concentration which will fulfil the purpose of the equipment; namely to minimise a persons capacity for resistance without unnecessarily long discomfort.

<u>CHEMICAL MAKE-UP</u>	<u>PURPOSE</u>	<u>EFFECTS</u>
CS Ortho- Chlorobenzylidene Malonotrile	CS is a “sensory irritant”. It is normally associated with crowd control in riots when delivered in smoke form (known as CS GAS). In a liquid form it makes it possible to aim a “jet” at a single person with little spreading of the effects to others nearby.	Distracts the person targeted by causing severe temporary irritation of the skin and mucus membranes in the eyes, nose and mouth
MIBK Methyl Isobutyl Ketone	CS is a solid that won’t dissolve in water. It has to be dissolved in the MIBK liquid in order to make it possible to store the product, have it work reliably, and to then spray the CS accurately when used.	MIBK is an irritant in it’s own right. It has a significant drying effect on the skin which can cause peeling, redness and itching.
Nitrogen	Propellant for the other ingredients. “Flash-evaporates” on contact with air.	None

APPENDIX 2

FORCE QUESTIONNAIRE

APPENDIX 3

COMPLAINTS QUESTIONNAIRE RESULTS

Female	20	27%
Male	115	73%

Under 18	7	5%
18 – 24	24	18%
25 – 44	88	65%
45 – 64	13	10%
Over 65	2	1%
Don't know	1	1%

Used on Complainant	121	90%
Not used	13	10%

Expected reaction	124	92%
Adverse/ Serious	8	6%
Permanent	0	-
Don't know	3	2%

FME – Yes	85	63%
FME – No	47	35%
Don't know	3	2%

If No FME - 1 needed	6	13%
If No FME – no need	33	70%
Don't know	8	17%

Advice Given	89	66%
No advice given	27	20%
Don't know	19	14%

Others advised	29	58%
Others Not advised	21	42%

Required Effect	106	79%
No effect	24	18%
Don't know	5	3%

1 Application	88	65%
2 Applications	34	25%
3 Applications	5	4%
4 Applications	0	0%
Over 4 Applications	2	1%

Detained	43	32%
Not detained	90	67%
Don't know	2	1%

Restrained	19	14%
Not Restrained	114	84%
Don't know	2	2%

Handcuffs	6	4%
No Handcuffs	127	94%
Don't know	2	2%

Primarily Self Defence	82	61%
Primarily Not Self defence	51	38%
Don't know	2	1%

Within 1m	41	30%
1m to 3.5m	79	59%
More than 3.5m	4	3%
Don't know	11	8%

Concern of Numbers	13	10%
No concern	120	89%
Don't know	2	1%

Alcohol	52	39%
No alcohol	81	60%
Don't know	2	1%

Mental Illness	6	4%
No Mental illness	127	94%
Don't know	2	2%

Enclosed	53	39%
Open Air	82	61%

Public Order	66	49%
Domestic	31	23%
Police Cell	1	1%
Private Vehicle	8	6%
Licensed premises	4	3%
Football etc	1	1%
Police Station	3	2%
Police Vehicle	7	5%
Hospital etc.	1	1%
Other	2	1%
Don't know	11	8%

Contamination of others	33	24%
No contamination	102	76%

Contamination of Bystanders	11	8%
No contamination	120	89%
Don't know	4	3%

Contamination of Officers	71	53%
No Contamination	62	46%
Don't know	2	1%

Discipline	13	10%
No Discipline	122	90%

ANNEX 4

ANNEX 5